DREAMWEAVER 3: INSIDE MACROMEDIA'S WEB POWER TOOL, P. 79

FEBRUARY 2000

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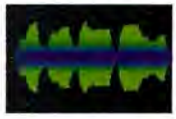
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7. Internet file sharing. *Mac OS 9's built-in file sharing now works over the Internet as easily as it works between two Macs in the same room. So you can set up shared folders that can be quickly accessed by any Mac user you authorize, around the corner or thousands of miles away.*



8. Internet AppleScript. *AppleScript® lets you automate your Mac and your applications, from the simplest task to the most complex workflow. Now you can tap the power of AppleScript over the Internet. And harness the power of multiple Macs working together all over the world.*



9. Network browsing. *With Mac OS 9's built-in Network Browser, you can navigate your way around your LAN, your intranet or the Internet with ease. Now you can find file servers, FTP servers and web servers the same way you locate printers on your own local network.*



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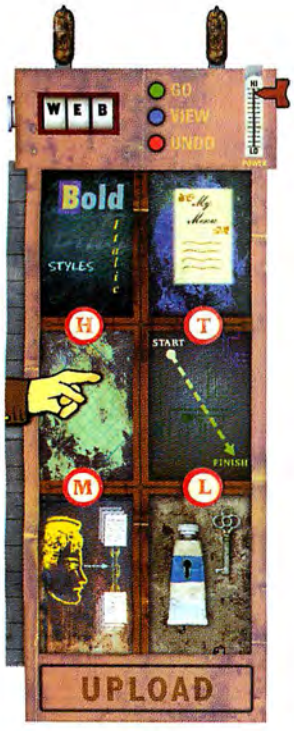
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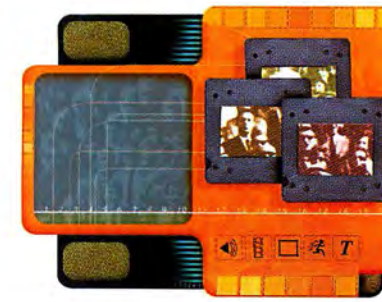
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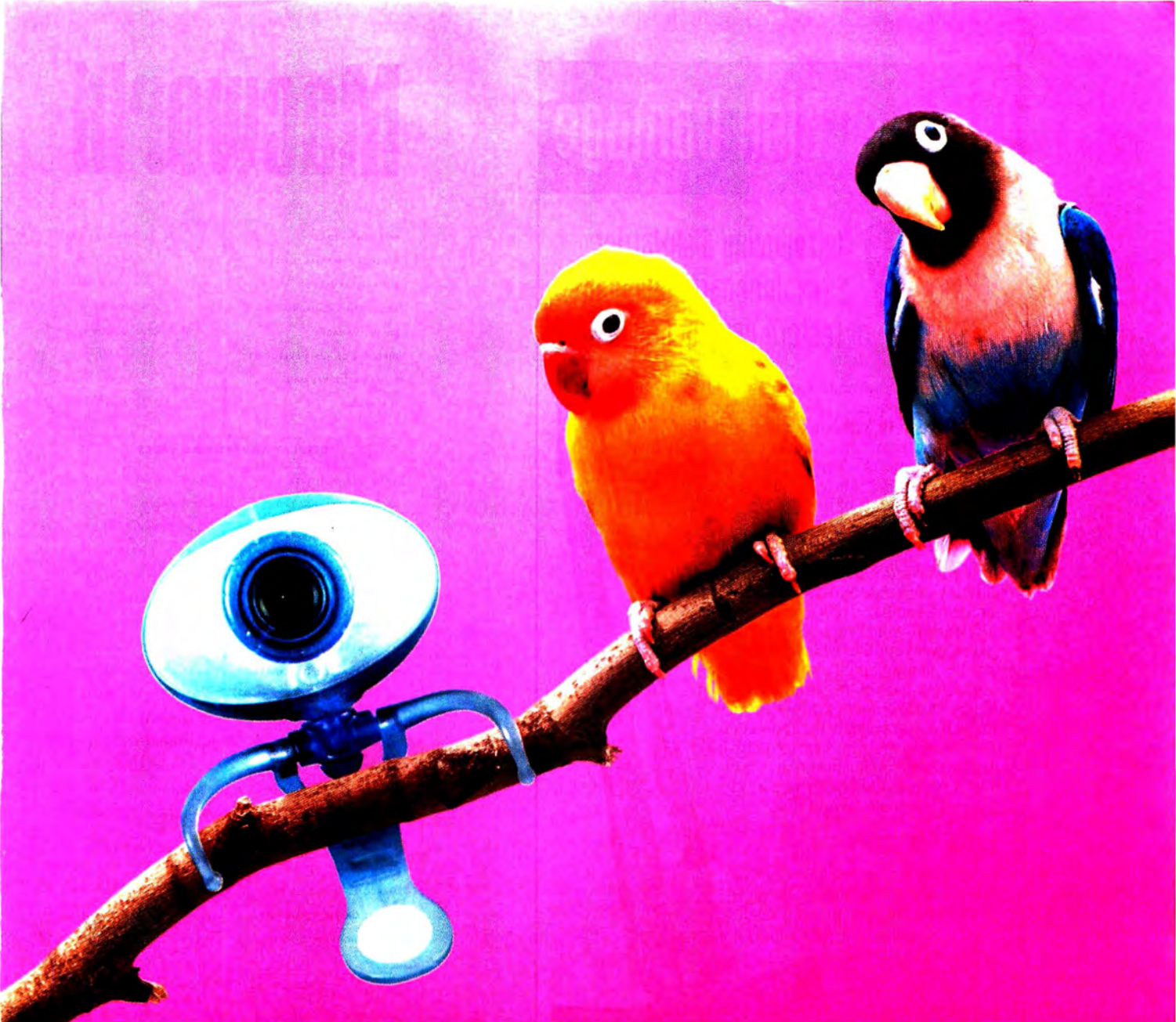
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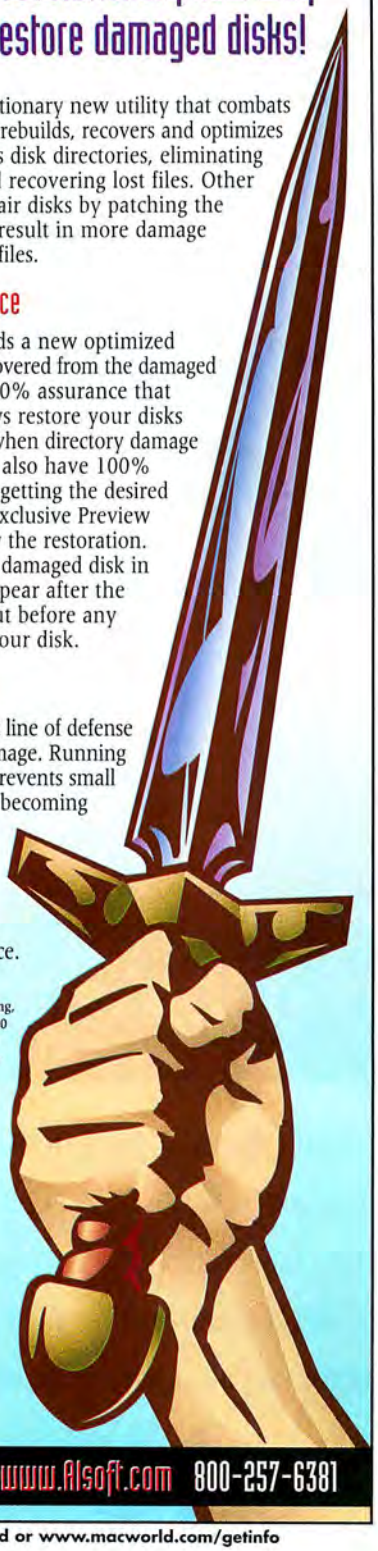
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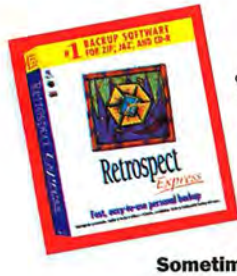
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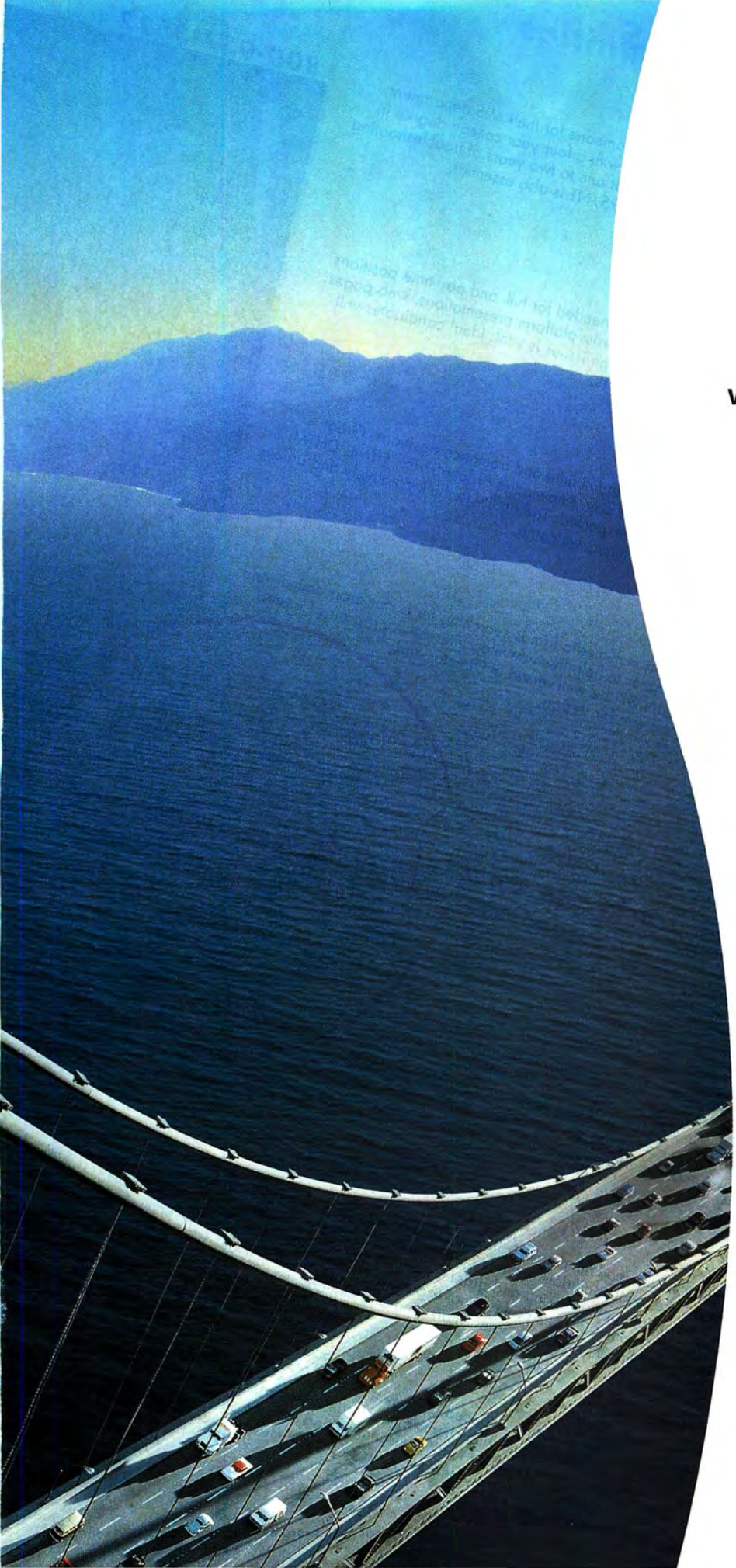


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Washington, DC: Creative and witty designers needed for full- and part-time positions. These jobs involve extensive use of images in cross-platform presentations, web pages, and print. Knowledge of RGB and CMYK design issues is vital. Ideal candidates will bring an original yet sensible style to their work.

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Letters

Pretty Sore about the G4

I HAD ORDERED ONE OF APPLE'S 500MHz G4 models ("Fantastic Four," November 1999) and was waiting for my order to be filled. Then I read that Apple had reconfigured the machines to run 50MHz slower, due to Motorola's chip shortage.

I understand that Apple had to change the configuration to keep up with supply and demand, but I think it's really cheap of the company not to change the computer's price to reflect the fact that the processor is slower.

What a disappointment from a company that seemed to be building its image back up. I canceled my order.

DAVID TOFTS
Newark, Delaware

Linux: Right Tool, Wrong Job

AS A LONGTIME LINUX USER AND advocate, I was somewhat disturbed by Mel Beckman's uninspired review of LinuxPPC 1999 (*Reviews*, November 1999). I'm not sure what Beckman expected from Linux. The operating system is derived from Unix, which was developed for programmers, not home users. I question what relevance the GUI, the Internet-browsing-software bundle, and the difficulty of installation have in the Unix environment. I suggest critiquing Linux on its own terms. Linux, unlike the Mac OS, cannot be learned in five minutes or less for the sake of a hurried software review in *Macworld*.

At the end of the article, Beckman is right in not recommending Linux to most users, but he's right for all the wrong reasons. I don't suggest Linux to the average home user either, but that's not because of its rough installation, its poor documentation, or its inability to operate seamlessly with the Mac OS. I don't recommend Linux because it's the wrong tool for most people. That is, if you aren't sure why you're using Linux, you probably shouldn't be using it in the first place.

DAVIN OVERLAND
Kelowna, British Columbia, Canada



DAVE CUTLER

Containing FireWire

I HAVE TO APPLAUD STEPHAN SOMogyi's FireWire article, but not too loudly ("Where's the Fire?" November 1999). He wanted to get the message across about how useful FireWire truly is, and I'm not so sure I want everyone to know.

Digital-video editing has become an affordable reality for amateurs; for full-time guys like me, FireWire has provided a way to produce video at a fraction of the cost of expensive film or high-end beta gear.

I run a production facility and still use the Avid Media Composer 9000 for bigger-budget projects, but when economy and high-end results are in demand, the hot little combination of the Canon XL1, the Apple G3, Final Cut Pro, and FireWire never misses. So, I guess I have to ask Somogyi not to spread the good news any further—it will get around soon enough. For now, let my clients think I'm a superhero.

BUDDY DOLAN
Orlando, Florida

Multiple Gamers, One IP Address

YOUR ARTICLE ON NETWORKING was very helpful ("Link It Up," November 1999), but it was missing the one thing I most wanted to know. Can I set up a home network, from a single static IP address, that would allow users at different computers to play games over the Internet? Or would I need separate IP addresses?

Thanks again for the great article.

DAVID STEINBERGER
Astoria, New York

It can vary from game to game, but in most cases you can't use a single IP address to play Internet games on multiple computers.—Ed.

Good Gaming

MANY THANKS TO CHRISTOPHER Breen for his honest appraisal of the iMac's and the iBook's poor gaming performance ("Does Apple Really 'Get' Gaming?" *The Game Room*, November 1999). I too own both an iMac and a PC, the latter only for playing games. I certainly prefer the Mac OS and use the

continues

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Mac for just about everything else. My PC cost about $800 (Celeron 400 with 64MB of RAM), and I upgraded it with a 3Dfx graphics board. It is a fine gaming machine for less than $1,000 (without a monitor). I urge Apple to include a "real" gaming graphics board and 64MB of RAM in the next version of the iMac. Then I can dump my PC altogether.

DANIEL GONNEAU
Astoria, New York

Happily, Apple has improved the iMac's gaming performance with the new iMac. It boasts an ATI Rage 128 graphics accelerator and 64MB of RAM standard. See "The iMac Is Back," January 2000.—Ed.

Whither Mac 3-D?

MACWORLD'S GRAPHICS-ACCELerator review tested 3-D accelerators with Quake II and Unreal (*Reviews*, November 1999). But where is the recognition of the importance of 3-D–graphics software for the Mac?

Although everyone is touting the power and performance of the Mac, and although it has remained the platform of choice for artists, Apple has lost sight of desktop 3-D graphics. When you walk into many 3-D–graphics production houses, you see artists working on Windows machines, not on Macs. The simple reason is that for high-end, professional 3-D graphics, you need more than just a fast computer. You need a serious 3-D accelerator, and you need serious software. Recently, 3-D–graphics magazines have praised the power of the G3 and G4 processors, but they can't recommend the systems because they have no real 3-D–graphics support. Since 3-D design is a growing business, Apple—and third-party manufacturers—should pursue this market.

MICHAEL LINDE
Boston, Massachusetts

MIA: the Performa 6300CD

I READ YOUR REVIEW OF THE G3 upgrade cards for Performas using the PowerPC 603e processor (*Reviews*, November 1999). I noticed that the Performa 6300CD, the model I purchased in November 1995, was absent from the list of Macs into which the upgrade cards can be installed—even though it also has a 603e processor.

Is this because the Performa 6300CD was mistakenly left off the list, or is it because the 6300CD won't take the upgrade cards?

JEFF BASSINSON
Jefferson City, Missouri

Unfortunately, the Performa 6300CD cannot be upgraded. Although it has a cache slot, its motherboard design is different from those of the Performa models listed in the review. Because of this, these upgrade cards are not compatible with your system.—Ed.

Nightmare on Quark Street

I LIKED DAVID BLATNER'S STRAIGHTforward article on converting QuarkXPress files to HTML ("From Printed Page to Web Page," *Create*, November 1999). One excellent point he made was that the design of Quark files cannot be duplicated exactly on the Web due to HTML and browser limitations.

With this in mind, I found one thing scary: Quark's planned support for Macromedia's Flash. As a print and Web designer, I've seen over 12 years' worth of clients' Quark print files with basic, glaring errors—missing fonts, wrong art formats, incorrectly specified colors, no bleeds, and so on. I do not look forward to the day when a client hands me a Quark file and says, "Make this look like a Flash file." *Shudder.*

TONY ISOLDI
Staten Island, New York

A Mac by Any Other Name

I REMEMBER BACK WHEN YOU HAD to choose from among the Power Mac 7500, 7600, 8500, 8600, 9500, and 9600—as well as the Performa 6116, 6400, and 6500. No words can do justice to the confusion Apple's old naming structure caused. Apple has finally simplified its naming structure, and now all I hear is computer geeks complaining that the names are too simple ("What's in a Name?" *The Vision Thing*, November 1999). In his column, Andrew Gore cites the problem of "trying to explain to a novice user how the iMac he or she bought a year ago is different from the iMac Apple was selling by Thanksgiving."

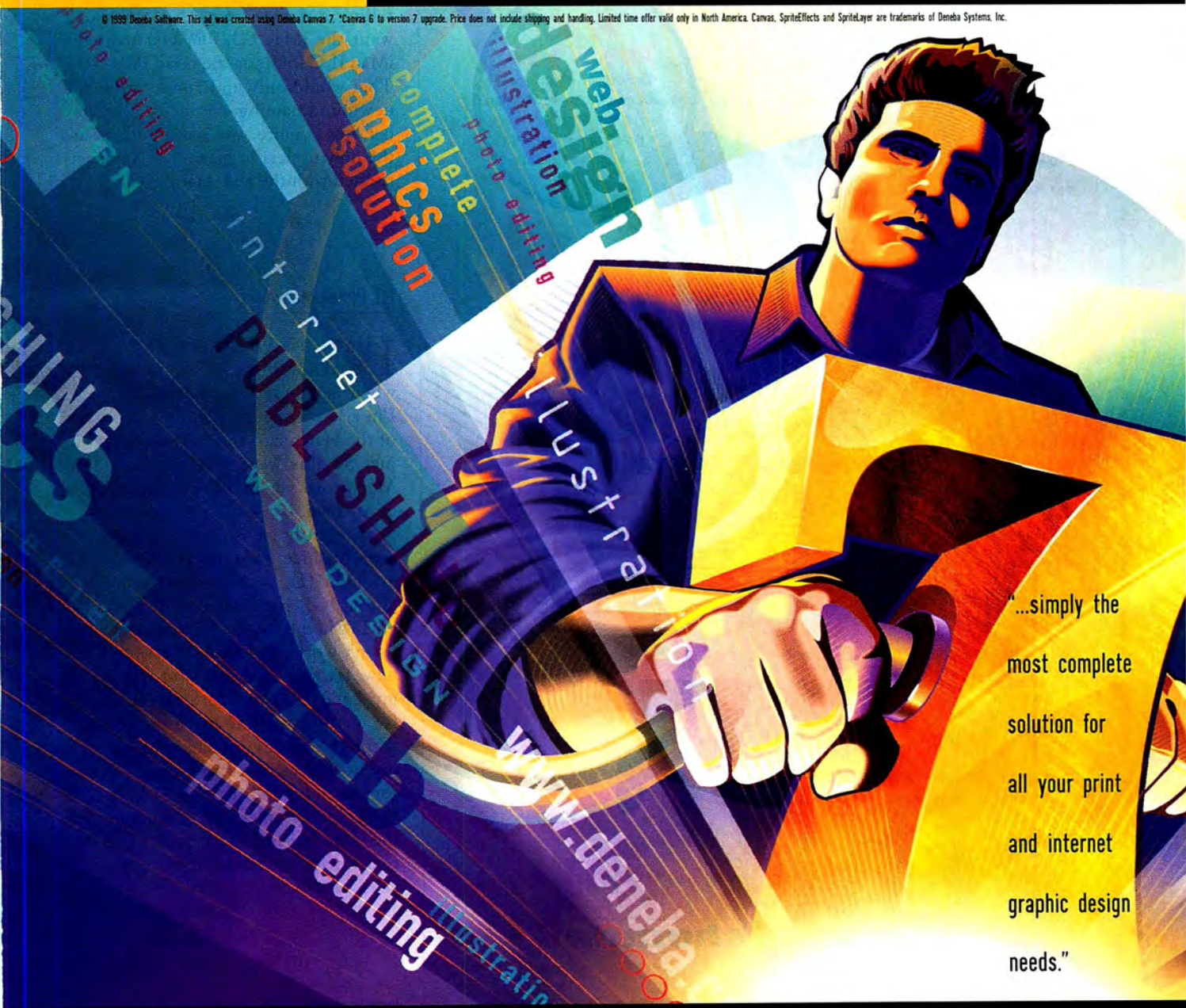
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Well, even novice users realize there's bound to be a difference between two cars with the same name if the cars were manufactured during different years. It's not too surprising that Apple is naming computers in the same way. The names *iMac* and *iBook* are important for brand recognition, and changing to some alphabet-soup naming convention would only dilute that. Imagine telling a novice user, "No, you don't want the iMac G3/300; you want the iMac II G4/450 or the iMac Plus 400." That would only undermine the Mac's newfound naming simplicity. Remember, less is more, and serial ports aren't the only useless baggage that Apple jettisoned with the new Macs.

SUDEEP GUPTA
Frisco, Texas

E.T. Phone Macworld

I HAVE READ MANY ARTICLES about how Macs stack up against PCs when benchmark tests are performed. I'm a fairly experienced user, but most of the benchmarks seem too abstract to me. So this week I began running a Macintosh versus PC benchmark test of my own.

I recently acquired a PC at work. It's a pretty nice Pentium II PC running at 450MHz with a ton of VRAM and a 9GB hard drive. I downloaded SETI@home for my PC to run while I wasn't working. I feared that, with my new, faster PC, the days of relying on my 266MHz iMac to help me search for extraterrestrial intelligence were through. I was very happy to see that my little iMac was more than a match for the bulky PC. It took 32 hours for the PC to complete the exact same task the iMac finished in 21 hours. This is a real-world benchmark that I can really get a handle on.

ROBERT PERRIN
Clarksville, Tennessee

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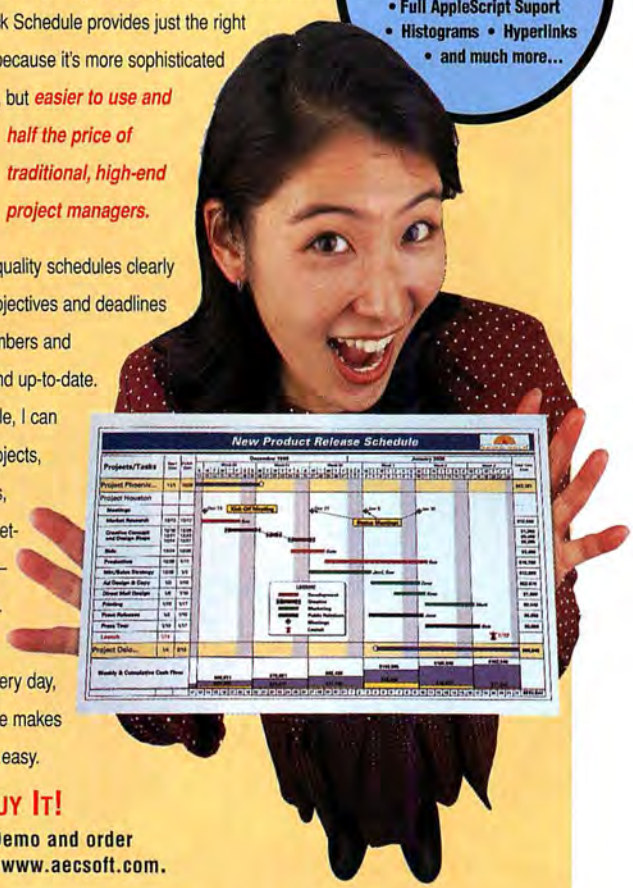
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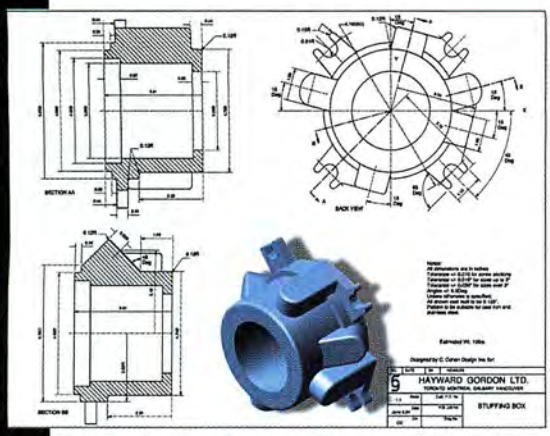
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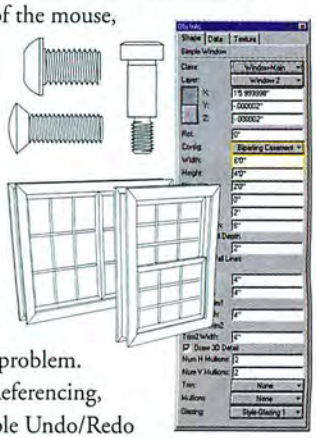
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The Vision Thing

by Andrew Gore

Time Bandits

THE COMPUTER IS NO LONGER THE BOTTLENECK. WE ARE.

SUNDAY, 5 P.M.; MONTEREY, California. One of the most scenic places on earth, and it's unlikely I'll get a minute to enjoy it. I'm here for a Web publishing conference—a group of print and online editors struggling not to get left behind as the rest of the Internet speeds ahead like a crazed pack of nearsighted lemmings.

The keynote speaker talks revolution and finance—no, I don't get it either. And I'm too busy taking notes for this column to be bothered with figuring it out. My subject? Bandwidth. The incredible lack of it.

Barbarians at the Gate

Monday, 8 a.m. The weather's turned nice on Monterey Bay. Breakfast is outside and the weather is sunny, even if the conversation isn't.

The real challenge isn't bandwidth, the attendees at my table say: it's *latency*. Servers are becoming overburdened trying to fill the pipelines they're attached to. That's because of the increasing number of Web users, the higher percentage of those users accessing servers over high-speed connections, and the growth of Web tools that access multiple sites simultaneously. Sites such as Google and AuctionTracker, not to mention utilities such as Apple's Sherlock, exponentially increase the number of hits one Web user can wreak on the Internet with just a few clicks. And servers are struggling to keep up with this vast growth in traffic.

But as I hurriedly take notes on the subject, I realize that I'm not that worried about server latency. It's human latency that keeps me up at night.

I look up from my notepad and realize everyone's left the table. Late again.

Quantity Time

Tuesday, 12:01 a.m.; my hotel room. At last, some private time. It's been a busy day—sessions, conversations, dinner with coworkers, drinks after dinner—and here I am again, past midnight before I can get some real work done. To heck with sleeping. I can always do that tomorrow.

It's true that the Internet is starting to hit the wall. But so are the human beings the Internet is intended to serve. Our lives are complex, and they're getting more complex by the minute. Work, family, friends, hobbies, travel—the slate is very full, and that's before you add in all the things that technology enables us to do.

No matter how simple the tools make it for us to surf the Web, chat with friends and colleagues across the planet, make our own movies, publish our own newsletters, and build our own Web sites, we are rapidly running out of bandwidth—time, to put it in more human terms—to enjoy these things. And it's frustrating because when we're done with all the things we have to do, we have little if any time left for the things we *want* to do.



ANTHONY RUSSO

Nuance and Meaning

Tuesday, 10:15 a.m. A speaker complains he can't read a 700-page book that he really wants to read. Whose fault is it? His for being a lazy reader? Or the publisher's for not presenting the information in a more efficient format? That, he contends, is what the Internet should do—distill information.

He's wrong. It *is* his fault.

Let's assume that the information in that 700-page book could be distilled into an e-mail. What's being lost? Context and nuance and all the meaning they entail. The experience of reading a book is just as important as what we learn from reading a book. That's why teachers frown on students' using Cliffs Notes—not because they won't learn the facts (an especially strange concept if you're talking about a work of fiction) but because they'll miss out on experiencing the words of the author and the emotional content they convey.

Yet this speaker is ready to trade in that experience just to recapture some of his lost time.

Technology is great. But we need to start thinking about what we're giving up in the drive to enable people to do more. Are products like Apple's iMovie terrific? Absolutely. But creating a movie is going to take more time than most users expect. The result? Instead of empowering users, the software ends up frustrating them and eating up their time.

If we're smart, while we're working so hard to make our products better, faster, and smarter, we may want to spend some time doing the same for ourselves. Otherwise, even the greatest innovation will be doomed to failure because no one will have any energy left to take advantage of it.

Tuesday, 2:00 p.m. Lunch is done, and so is this column. Time to move on to the next session. What is it about? Oh, yes, building communities on the Internet.

So it goes. ■

Questions? Comments? E-mail them to Andy at visionthing@macworld.com.

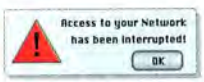
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News

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Microsoft Ruling to Have Minimal Mac Impact

JUDGE'S DECISION WON'T AFFECT MAC PRODUCT DEVELOPMENT

by Philip Michaels



JEFF NEUMANN

Mac users probably had a difficult time concealing their glee after a federal judge declared in November 1999 that Microsoft had used its operating-system monopoly to snuff out competition. The scathing ruling dealt a sound defeat to a longtime Apple rival that many Mac partisans love to loathe. U.S. District Judge Thomas Penfield Jackson even cited Apple as one of the companies harmed by Microsoft's behavior.

But how will the case affect Macintosh consumers—and Microsoft's role as a key Mac software developer? Not much—at least in the short term.

Microsoft says it still plans to release upgrades of its flagship Macintosh programs, Outlook Express, Internet Explorer, and Office. Jackson's finding of fact "has no role at this time in any of our business plans," says Microsoft spokesman Jim Cullinan. "This is a small step in a long process."

For its part, Apple is keeping quiet about the ruling. The company declined comment on how it might be affected by the Microsoft case.

The Findings In declaring that Microsoft abused its monopoly power, Jackson cited the company's efforts to force computer makers to bundle Internet Explorer instead of Netscape Navigator with their systems. During the trial, Apple software chief Avie Tevanian testified that Microsoft threatened to cancel the Mac version of Microsoft Office 97 if Apple didn't adopt Internet Explorer as the default Mac Web browser. Canceling Microsoft Office would have been a crippling blow at a time when Apple was losing money and market share, so Apple agreed to the deal. Tevanian also testified that Microsoft tried to get Apple to kill QuickTime, its popular multimedia-system software.

What's Ahead Although the ruling was a clear defeat for Microsoft, the antitrust case is far from over. The November ruling was a finding of fact: the judge declared what he determined to be the facts in the case. Now he must rule on whether Microsoft's actions actually violated antitrust laws, and if so, to what degree. That decision could take anywhere from six weeks to several months, says Bryan Ford, an associate professor of law at Santa Clara University.

In the final phase, the court determines a remedy, which could mean anything

continues

from forcing Microsoft to let other firms sell its operating system to breaking up the company into separate units. If Microsoft appeals—and the company is almost certain to—it could delay the case's resolution for several years.

Microsoft and the government could still settle the case. Ford is doubtful, however. Because government lawyers won on every point in Jackson's finding of fact, they have little reason to negotiate, and Microsoft is unlikely to consider a deal it finds too burdensome.

In the meantime, Cullinan says, Microsoft remains "committed" to its place in the Mac market. The Mac edition of Outlook Express 5.0 began shipping in October 1999, and Internet Explorer 5.0 is on track to roll out in early 2000.

systems

Apple to Acquire 3-D Chip Maker?

WILL APPLE BRING 3-D HARDWARE IN-HOUSE?

by Macworld Staff

Apple watchers got a possible hint of the company's future product-development plans when the *Wall Street Journal* reported in November 1999 that Apple had agreed to purchase Raycer Graphics, a little-known developer of 3-D–graphics–acceleration chips, for roughly $15 million. Although Apple had no comment on the deal, it appears to be a sign that the company wants to bring 3-D–graphics–acceleration technology—an increasingly important component in today's PC system designs—in-house.

Apple currently gets its 3-D–graphics chips from ATI Technologies; ATI's Rage 128 powers the Power Mac G4 and new iMacs, while the Rage Mobility drives the video display in PowerBooks and iBooks. Although the Rage 128 offers excellent 2-D and 3-D acceleration for Mac users, the Mac has had a tough time keeping up with the latest 3-D technologies used in Windows PCs. For example, while the Rage 128 holds its own against 3Dfx's popular Voodoo 2 chip, Macworld Lab tests show that the next-generation Voodoo 3 offers faster 3-D performance.

Tough Road This hasn't been an easy time for developers of Mac-based 3-D–graphics cards. The latest victim is Mactell, a vendor of Mac video and CPU accelerators that shut its doors in October 1999. Mactell had planned to offer a Mac-based Voodoo 3 card this fall, but that became a shaky business proposition when 3Dfx decided to post Mac drivers on its Web site. From a hardware standpoint, Voodoo cards for the Mac and PC are identical; only the software drivers are different. Because the PC market is so much larger than the Mac market, vendors of PC Voodoo cards can charge much less than their Mac counterparts for the same hardware. As a result, Mac users can buy one of the less expensive PC versions and download the needed Mac drivers from the 3Dfx Web site.

Micro Conversions, which offered game-accelerator cards based on the Voodoo and Voodoo 2 chips, cited the inexpensive Voodoo cards as the major culprit when it closed its doors in June 1999. Other 3Dfx licensees include IX-Micro, which uses the Voodoo 2 chip in its Game Rocket board, and VillageTronic, which uses Voodoo chips in its MacPicasso video cards.

Raycer, founded in 1997, develops 3-D–acceleration chips for Intel-based hardware but does not yet have an actual product to sell. The company's technology supports OpenGL, the 3-D–graphics system software that Apple has incorporated into the Mac OS.

multimedia

Apple Unveils QuickTime Update

NEW VERSION ADDS SCRIPTING FEATURES

by Stephen Beale

Seeking to enhance QuickTime's role as a streaming-media standard for the Web, Apple has announced an update to the multimedia software that adds new scripting features and the ability to automatically insert ads into streaming QuickTime movies. The company has also signed on new partners for QuickTime TV, the QuickTime-based streaming-media network. Apple made the announcements at its recent QuickTime Live conference in Los Angeles.

QuickTime 4.1, scheduled for delivery in early 2000, will add support for



A Small Price for Big Prints

COST-CONSCIOUS BUSINESSES CAN NOW BRING THEIR poster production in-house without printing up lots of money to pay for it. The Stylus Color 1160 ink-jet printer, from Epson America (800/463-7766, www.epson.com), targeted for use with common business and technical applications, handles paper sizes up to 13 by 44 inches. If that's not big enough for you, a new poster print option makes it easy to tile individual pages into a single gigantic print. Equipped with a USB interface, the printer sells for $399 after a $50 rebate from Epson. An Ethernet connection costs extra.—MACWORLD STAFF

ARNOLD TIOSEJO

iShell Upgrade Adds Custom Media Players

CONTINUING ITS SEEMINGLY QUIXOTIC CHALLENGE to Macromedia Director, Tribeworks (800/807-4458, www.tribeworks.com) has introduced iShell 2, an upgrade to the multimedia-authoring software that adds the ability to create customized streaming-media players for Web sites. The software, developed by one of the creators of the Apple Media Tool, lets you produce interactive media-rich presentations by dragging icons into a project window. Tribeworks says that the custom media players, which can be any size or shape, are full Internet applications that run without plug-ins in Netscape Navigator or Microsoft Internet Explorer. Tribeworks offers iShell through a unique marketing scheme: the software is free, but the company encourages users to pay a $2,000 annual membership fee ($1,000 for renewals), which entitles you to full technical support, third-party product discounts, and a software developer's kit. A beta version of the upgrade is available for download by paid members, but Tribeworks says the final version will be available for free.—STEPHEN BEALE

AppleScript and SMIL; the latter is a scripting language for creating Web-based interactive content. During the conference, Apple product marketing vice president Phil Schiller demonstrated a SMIL script that ran a QuickTime movie, launched a QuickTime video stream, and opened a Web browser. The automated ad-insertion feature will make it easier to swap video ads in and out of QuickTime movies.

Apple also plans an early-2000 release for a new version of the QuickTime Streaming Server, which enables real-time streaming of media content. The upgrade will include a Playlist function that lets producers automate the sequencing of server content, as well as a password-protection feature for QuickTime movies. The latter function will allow Web producers to charge fees for viewing QuickTime content.

Along with the new QuickTime features, Apple has announced several new QuickTime TV channels, including Financial Times, Nickelodeon, MTV, and CNN, all of which you can access through the QuickTime Player. To ensure the fastest-possible downloads, most of the QuickTime TV channels are distributed through a network of high-speed media servers managed by Akamai, which Apple signed on as a partner for QuickTime TV's summer 1999 debut. However, the CNN channel, which offers headline news stories on demand, is distributed through a competing network from InterVu.



JEFF NEUMANN

Streaming Servers Software developers are also getting into the QuickTime act. Novell (888/321-4272, www.novell.com) announced that the next version of its caching server will offer full support for QuickTime streaming, allowing users to pause, play, rewind, and fast-forward live video and audio streams. The technology is based on Apple's Darwin Streaming Server, an open-source version of the QuickTime streaming software that developers can freely incorporate into their products. Oracle (650/506-7000, www.oracle.com) has announced a product called InterMedia that allows Oracle databases to serve QuickTime content on the Web. QuickTime movies served from an Oracle database will be searchable using Apple's Sherlock utility.

Get Real The competition isn't sitting still. RealNetworks (800/632-8920, www.real.com), one of Apple's two major rivals in the live-streaming arena (the other is Microsoft), has released beta versions of forthcoming upgrades to its RealPlayer media players for Mac and Windows. New features in the free RealPlayer 7 software include faster start-up time, enhanced media navigation, a resizable presentation window, a caching feature that reduces download time for frequently played content, and a message service that notifies you when new programming is available.

RealPlayer 7 Plus, which costs $30, adds a ten-band graphic equalizer and one-button access to audio and video programs.

continues

Product WATCH

Shoot 'Em Up Now you can capture high-resolution still images and low-resolution QuickTime movies with the same camera. The **C-2020 Zoom,** from Olympus America (516/844-5000, www.olympus.com), features a new QuickTime-movie shooting mode that lets you capture 15 frames per second (fps) at 320 by 240 pixels, or 60 fps at 160 by 120 pixels. The $899 point-and-shoot camera, with a 2.11-megapixel CCD, 3× optical zoom, and infrared remote, also features new shooting modes for black-and-white and sepia-tone images.

Photo Floodgate Having trouble getting your digital-camera shots into your Mac? **PhotoChute 3,** from Antec (888/542-6832, www.antec-inc.com), is a $139 external USB card reader that supports the high-speed transfer of images stored on SmartMedia, Type I and Type II ATA Flash, and CompactFlash cards.

CRTs, Cheap! Flat-panel monitors may be getting all the attention these days, but inexpensive CRTs still reign on most desktops. The new **AccuSync** line of monitors, from NEC Technologies (800/632-4636, www.nectech.com), includes six models ranging from 15 to 19 inches, with prices beginning at $159. The monitors are scheduled to ship by the time you read this.

Mighty Mite NEC has also released what it says is the

continues

Product WATCH

smallest and lightest USB scanner in the industry. The **PetiScan** is a portable 30-bit color scanner that offers 300-by-600-dpi optical resolution. Its maximum scanning area is 5.8 by 3.9 inches. Larger items can be scanned in parts and stitched together using software included with the package. The $179 scanner weighs 1.3 pounds and will be available by the time you read this.

CD-ROM Booster FWB Software (415/345-4300, www.fwb.com) has announced **CD-ROM ToolKit 4.0,** a new version of its $79.95 CD-ROM drive utility that brings the software up-to-date with Mac OS 9 and other recent Apple products. The software is designed to boost CD-ROM performance by using the computer's idle RAM. Along with the drive utility, the package includes Panic's Audion player for MP3 playback and 500MB of MP3 music titles from Trax In Space.

Fire-Breathing Fantom Drives (310/474-1685, www.fantomdrives.com) has unveiled **FireStorm,** a new line of FireWire storage devices. FireStorm hard drives, available in 15GB, 25GB, and 34GB capacities, are bundled with CharisMac Engineering's Anubis Formatting Utility. The product line also includes a $449 4×4×20 CD-RW drive bundled with CharisMac's Discribe mastering software. Pricing for the hard drives has not been set.—EDITED BY FRITH BREITZER

productivity

Stat Program Returns to the Mac

SPSS WILL OFFER MAC VERSION OF SPSS 10

by Philip Michaels

As Apple's resurgence continues, software developers that had dropped their Mac products are scrambling to return to the fold. The most recent is SPSS (800/521-1337, www.spss.com), which plans to bring the latest version of its statistical-analysis software, SPSS 10.0, to the Mac before the end of summer. The company hasn't released a Mac version of the program since 1995, forcing Mac users to make do with SPSS 6.1.

Why did SPSS drop the Mac? Technology built into the Windows version proved too difficult to translate into Mac-based software, and SPSS decided it was too costly to build a Mac version from the ground up. Now, five years later, SPSS has found a partner, Software MacKiev, to port Windows applications to the Mac. In addition, the company says improvements in the software's statistical-analysis functions have fueled the demand for an upgraded Mac version.

SPSS promises that Macintosh users will see some definite improvements in version 10.0, including more-advanced data-manipulation and graphing functions and the ability to access data without first converting it from other formats. Although pricing has not been set, an SPSS spokesperson speculated that pricing will mirror that of the Windows version, which costs $999 for a single-user license.



Ink-Jet Prints You Can Eat

YOU'VE HEARD OF DESKTOP PUBLISHING AND DESKTOP video, but what about desktop cake decorating? The $999 Digital Cake Decorator, from Lumina Office Products (408/487-0400, www.luminapcc.com), consists of a flatbed scanner connected directly to a modified Canon BJC-4400 ink-jet printer. Simply scan in your tastiest artwork and you can produce an edible color print to place on top of a cake. No computer is required, but you can use your Mac to produce printed artwork to scan into the system. Digital cake decorating is nothing new, but systems used in bakeries sell for as much as $10,000.—STEPHEN BEALE

utilities

Berkeley Grounds Flying Toasters

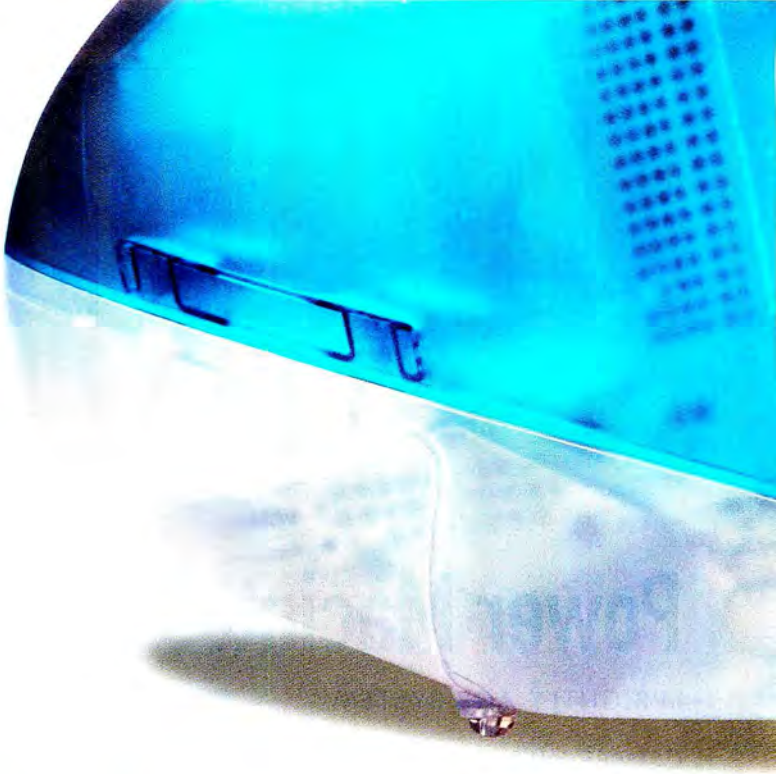
DEVELOPER WON'T UPDATE AFTER DARK

by Macworld Staff

Those flying toasters and other marvels that raced across your monitor in Berkeley Systems' After Dark screen savers will soon make their final flight. Berkeley Systems (800/757-7707, www.berkeleysystems.com) has acknowledged that After Dark is incompatible with Mac OS 9 and says it has no plans to fix the problem. Users had reported system errors when running the After Dark control panel under the new OS. Berkeley says the screen saver works fine under Mac OS 8.6 and earlier OS versions.

Other developers of Mac-based screen savers have stepped into the breach. Ambrosia Software (716/325-1910, www.ambrosiasw.com) announced a promotion—good until December 31—under which After Dark users can upgrade to the company's Eclipse screen saver for $10. Other screen-saver developers include SoftStuff (888/763-0775, www.softstuff.com) and Chaotic Software (www.chaoticsoftware.com). The SETI@home screen saver (setiathome.ssl.berkeley.edu) lets you preserve your screen while helping in the search for extraterrestrial intelligence.

SUZANNE ROADY



Laser Power for Generation i

Say hello to our iMac™ & G3 compatible Laser Printers and Multi-Function Centers.

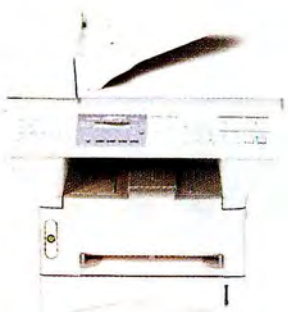
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Reviews

Power Macintosh G4/400

SPRIGHTLY AGP SYSTEM COMES WITH QUIRKS


GIBSON

APPLE IS PLAYING THE NAME game again. To simplify its product lineup, Apple has placed each model in one of four categories: Power Macintosh G4, PowerBook G3, iMac, and iBook. To learn the specifics of a particular model, you must look to its parenthetical name, such as PowerBook G3 (Bronze Keyboard). With the release of the new Power Macintosh G4 series, Apple further confused matters by including a low-end model—the 350MHz Power Macintosh G4—that has far more in common with a blue-and-white Power Macintosh G3 than with its siblings, the 400MHz and 450MHz Power Macintosh G4 models.

Making things even more complicated, Apple reconfigured its Power Mac G4 product line after releasing the first model. A 350MHz configuration has replaced the original 400MHz Power Mac G4 but is still based on the blue-and-white Power Mac G3 design (see *Reviews*, December 1999). The original $2,499 450MHz system, featuring Apple's new Sawtooth architecture with AGP graphics and other speed enhancements, now sports a 400MHz processor.

Not surprisingly, we found that the 350MHz system is just a little slower than the original 400MHz model but still delivers better performance than any G3 system. The new 400MHz configuration, with its revamped system design, is even faster, but it has a few kinks that need working out.

It's All in the Motherboard

If you were to place the new 350MHz and 400MHz models side by side, you'd notice only slight differences. The 400MHz model includes an internal Iomega Zip drive, places the video port near the center of the machine, and has vertically aligned sound ports. However, when you open the cases, the differences become more apparent. On one side of the 400MHz model's fold-down door, you can see a silver AirPort cable and connector, indicating that this model, unlike the 350MHz system, supports wireless networking (Apple sells the AirPort card separately). The cleverly hidden antenna cable connects to two metal posts on top of the case.

Both systems include ATI's Rage 128 graphics accelerator with 16MB of SDRAM. However, the 350MHz system uses a PCI bus connection, while the 400MHz model uses the faster AGP 2× graphics slot. This is a welcome change; new PCs have shipped with the faster slot for more than a year, and it's nice to see Apple finally join the AGP party. The AGP-equipped Macintosh supports the new 24-inch Apple Cinema Display, but the PCI model does not.

REAL PRODUCTS REAL RATINGS Reviews you can trust: Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.
OUTSTANDING: ♦♦♦♦♦ VERY GOOD: ♦♦♦♦ GOOD: ♦♦♦ FLAWED: ♦♦ UNACCEPTABLE: ♦

Macworld LAB TEST

Old and New

Apple's 350MHz and 400MHz G4 systems both outpaced a 400MHz G3 model in most of our tests.

Best results in red. *Reference system in italics.* **Photoshop results are in seconds. Bryce and SoundJam results are in minutes:seconds.**

	ADOBE PHOTOSHOP 5.5				BRYCE 4	SOUNDJAM	QUAKE II
	Gaussian Blur	Unsharp Mask	RGB to CMYK	Lighting Effects	Render Scene	MP3 Encode	Frames per Second
Apple Power Macintosh G4/400	5.9	7.2	15.8	5.9	22:51	1:58	50
Apple Power Macintosh G4/350	7.0	8.8	18.6	6.7	27:18	2:11	46
Apple Power Macintosh G3/400	*12.9*	*12.7*	*19.0*	*17.0*	*25:33*	*3:06*	*46*
	Shorter bars are better.						Longer bars are better.

Behind Our Tests We tested each system with Mac OS 8.6, 128MB of RAM, and virtual memory disabled. We performed Photoshop tests with a 30MB file. We performed the MP3-encoding test using an audio-CD track that was 9 minutes and 25 seconds in length.—**Macworld Lab testing supervised by Gil Loyola**

The 400MHz G4 also has an internal FireWire port, sure to become more useful with the introduction of new FireWire storage devices. However, the connector is placed awkwardly next to four RAM slots near the top of the door. To connect an internal FireWire peripheral, you will have to route the cable around PCI cards and the G4 processor's massive heat sink. Apple generously provides a FireWire cable for just this purpose; it works with external devices as well.

The 350MHz Power Mac G4 uses the same internal 56-Kbps modem found in blue-and-white G3 systems, but the 400MHz system uses a different 56K modem. This isn't significant unless you hope to use a serial-port adapter that works only with the older modem slot.

What You Don't See

Some of the 400MHz model's enhancements, such as the new USB implementation, are less noticeable. Not only does the 400MHz G4 sport two discrete 12MB USB controllers, allowing you to connect as many as 127 USB devices to each port, but you can also boot from a USB drive. The 400MHz model also supports USB audio devices such as speakers and microphones. Of course, you still need Mac-compatible drivers for these audio devices.

Unlike the 350MHz system, which features a CD-ROM drive, the 400MHz model sports a DVD-ROM unit. Regrettably, instead of using a hardware-based DVD decoder, the 400MHz model uses a software decoding scheme that causes DVD playback to stutter when other tasks occupy the system. For example, when we adjusted the movie's volume, video playback skipped momentarily. More troubling is that the video and audio channels quickly lose sync. When we watched a movie on a PowerBook G3 equipped with a DVD-ROM player and hardware decoder, audio and video synced perfectly. On our G4/400, the same movie appeared to be dubbed—the actors' mouths and the audio track were perceptibly off.

If you change the monitor's bit depth while Apple DVD Player is running, you can lose the video signal completely, ending up with a static, greenish screen. On two occasions when we changed monitor resolutions during playback, the G4 froze. Because we had no similar problems switching bit depth and resolution on a PowerBook G3, we can only assume that software decoding is to blame for this behavior. Apple is aware of the sync issues with the AGP G4s and is reportedly working on a fix, which it hadn't released as we went to press.

Performance

We tested system performance using Adobe Photoshop 5.5, MetaCreations' Bryce 4.01, Activision's Quake II, and Casady & Greene's SoundJam MP 1.1.1. As we expected, the 400MHz G4 system was much faster than a 400MHz Power Mac G3 when using applications, such as Photoshop and SoundJam MP, that take advantage of the Velocity Engine subprocessor (see "Old and New"). For example, the G4 was about twice as fast as the G3 when applying a Gaussian Blur and almost three times faster when running the Lighting Effects plug-in. The G4 was much faster when encoding MP3 files and a little faster when rendering a Bryce scene. However, Quake II performance was similar on both machines, thanks to their identical Rage 128 graphics accelerators.

Thanks to the system-design improvements, the 400MHz G4 also outpaced its 350MHz sibling, even though the latter includes Velocity Engine as well. For example, the 400MHz G4 saved 13 seconds over the 350MHz G4 when encoding our MP3 test file—this could add up if you plan to encode an extensive audio-CD collection. The performance difference was more dramatic in our Bryce 4.01 rendering test; here, the 400MHz G4 was about 4.5 minutes faster at rendering a scene than the 350MHz model.

Macworld's Buying Advice

With a slower processor but the same price tag as Apple's originally announced midrange model, the 400MHz Power Mac G4 is not as good a value as it could have been. However, given its faster graphics bus, more flexible and more robust USB capabilities, internal FireWire port, and built-in Zip drive, the 400MHz system goes a long way toward tempering any complaints we have about Apple's software-based DVD decoder.—CHRISTOPHER BREEN

RATING: ♦♦♦♦ **PROS:** Fast; AGP graphics slot; more-flexible USB ports. **CONS:** DVD playback stutters; internal FireWire port is awkwardly placed. **COMPANY:** Apple Computer (800/795-1000, www.apple.com). **LIST PRICE:** $2,499.

AirPort Base Station and AirPort Card

WIRELESS-NETWORKING SYSTEM LETS YOUR MAC ROAM

AFTER A GREAT DEAL OF FANfare at last July's Macworld Expo, Apple has finally shipped the AirPort Base Station and accompanying AirPort card (sold separately), heralding a new era of wireless communication for Mac users.

With the AirPort, a network of Macs can share a single IP address, and up to ten users can connect to each other or to the Web via a single Base Station. You can also wirelessly network AirPort-equipped Macs without relying on a Base Station. However, don't expect to achieve the Ethernet-equivalent 11-Mbps throughput that Apple claims. The AirPort is plenty fast for a wireless connection, but it doesn't match 10BaseT Ethernet performance. And we're disappointed that Apple has not implemented its Base Station software scheme, which turns any AirPort-equipped Mac into a virtual Base Station (see the sidebar "The AirPort Arrives," in "Street Smarts," elsewhere in this issue).

We installed AirPort cards in three Mac models—a 450MHz Power Macintosh G4, an iMac DV, and an iBook. Installing the cards was a breeze. The AirPort comes with a special bracket for adding the card to an iMac DV; you simply remove this bracket to install the card into another Mac model. After installing the software, you run the Setup Assistant, which lets you join an existing network or configure a Base Station.

Configuring the Base Station is a mostly transparent process. If you've already created Internet settings on the Mac from which you're configuring the



MARK JOHANN

Base Station, the Setup Assistant adds these settings to the AirPort application. If your Mac isn't configured for the Internet, the Setup Assistant launches the Internet Setup Assistant.

The easiest way to control your AirPort network is through the AirPort Control Strip module, which lets you monitor the strength of the AirPort's signal and choose between connecting to the Base Station and connecting to another Mac.

We were mightily impressed with the reliability of the AirPort's connections. After setting up a Base Station inside Macworld Lab, we used an AirPort-equipped iBook to log onto the Internet via the Base Station modem. Then we marched around a large office and took an elevator down one floor, using the AirPort utility to continuously monitor signal strength. Although the iBook stopped receiving data while we were in the elevator, it resumed once we stepped out to the floor below.

The connection may be steady, but the AirPort doesn't hold up to Apple's claims of Ethernet-level performance. In Macworld Lab tests, a large file transfer between two Macs took two to four times longer with the AirPort than with 10BaseT Ethernet (see "Ready for Takeoff"); performance was even slower when we connected additional Macs to the system. (Because of the Base Station's limited bandwidth, when adding clients, you can expect an even bigger performance lag than you'd get on an Ethernet network.) However, the connection feels fast enough; when we played a game of Quake II between two AirPort-equipped Macs, performance was similar to what you'd see on a LAN connection, with no noticeable lag.

In addition to offering so-so network performance, AirPort sometimes forces you to go through a cumbersome set of software procedures when restoring a lost connection.

Macworld's Buying Advice

At $99, the AirPort card is attractively priced, especially considering how easy it is to connect multiple Macs—even without a Base Station. And if you'd like to maintain a single IP address and Ethernet connection for a network of Macs, you'll find the AirPort Base Station useful. If you need the fastest possible network connection, wired Ethernet is still your best option. But if you want the convenience of a wireless connection, an AirPort is likely to be in your future.—CHRISTOPHER BREEN

AirPort Base Station

RATING: ♦♦♦½ **PROS:** Easy to configure; permits multiple Internet connections over single modem. **CONS:** Unimpressive performance. **COMPANY:** Apple Computer (800/795-1000, www.apple.com). **COMPANY'S ESTIMATED PRICE:** $299.

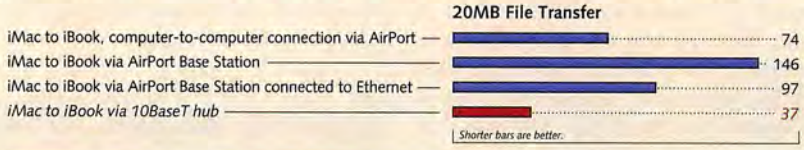
AirPort Card

RATING: ♦♦♦♦ **PROS:** Easy to install; permits computer-to-computer networking without Base Station; inexpensive. **CONS:** Unimpressive performance; reestablishing broken connections can be difficult. **COMPANY:** Apple Computer (800/795-1000, www.apple.com). **COMPANY'S ESTIMATED PRICE:** $99.

Macworld LAB TEST

Ready for Takeoff

Best results in red. *Reference system in italics.* **Results in seconds.**



Behind Our Tests

We transferred a 20MB Adobe Photoshop file via the AirPort using an iMac DV Special Edition and an iBook. The systems ran Mac OS 8.6 with a 2MB system disk cache.—**Macworld Lab testing supervised by Gil Loyola**



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Two-Megapixel Cameras

EIGHT MODELS PASS THE TWO MILLION-PIXEL MARK

WANT TO IMPRESS YOUR friends? The next time you see an ad for a megapixel camera, yawn. That's right, a million pixels just doesn't cut it anymore. These days, you've got to have at least twice that many. A scant five months after reviewing the first two-megapixel camera priced less than $1,000—Nikon's Coolpix 950 (see "Digital Cameras Develop," September 1999)—we received eight new models that punch fresh holes in the two million-pixel barrier. Four capture more pixels than the Coolpix 950's 1,600 by 1,200, and two are small enough to fit in a pocket. Better yet, all but one can be yours for less than $1,000. But if you've already purchased the Coolpix, don't fret—we stick by our ●●●●½ rating for its exemplary image quality. Still, these new cameras prove that megapixel technology is officially *two* cool.

The New Two-Megapixel God

We keep expecting digital cameras to get dull, but they steadfastly refuse. This time, the standout is the Camedia C-2500L, from Olympus. At $1,499, it costs more than twice as much as the least-expensive camera in this roundup, but if you have the budget, the C-2500L earns its fee. First, it boasts a single-lens-reflex (SLR) design, so you can frame your shot using the same lens element through which the camera sees. By comparison, every other two-megapixel camera relies on an independent (and therefore inaccurate) optical viewfinder and/or a power-guzzling LCD preview. With the C-2500L, you can frame your shot quickly and accurately without burning through the batteries.

But that's just the beginning. The C-2500L sports a pop-up flash, so there's no chance of firing the strobe when you don't want it. And there's a hot-shoe for mounting an extension flash. If you have a problem getting the autofocus to lock onto a subject—a particular problem in low light—you can select from 16 manual focus overrides. You can extend the shutter speed to as long as 8 seconds and control whether to fire the flash at the beginning or end of an exposure, a great feature for photographing moving subjects at night. And if you can't figure out the menu, the documentation offers copious illustrations as well as the occasional photography tip. It's the best camera manual we've seen.

Olympus wisely ships the C-2500L with four rechargeable NiMH AA batteries and a charger. It includes more memory than the other cameras—a full 32MB compared with the standard 8MB—and it's the only camera that supports both flash-memory formats, the wafer-thin SmartMedia and the more versatile CompactFlash. (The C-2500L ships with a 32MB SmartMedia card.)

Naturally, this being a digital camera, all is not perfect. Olympus does not include a USB cable, so users of newer Mac systems can't connect the camera directly to their computers. And though

Two-Megapixel Cameras

Company	Canon	Epson	Epson	Kodak	Kyocera
Product	PowerShot S10	PhotoPC 800	PhotoPC 850Z	DC280	Samurai 2100DG
Mouse rating	●●●½	●●½	●●●½	●●	●½
Company's estimated price	$699	$699	$799	$799	$799
Contact	757/413-2848 www.powershot.com	310/782-0770 www.epson.com	310/782-0770 www.epson.com	716/724-4000 www.kodak.com	800/526-0266 www.kyocera.com
CCD resolution (in millions of pixels)	2.11	2.14	2.11	2.30	2.14
Maximum image size (in pixels)[A]	1,600 × 1,200	1,600 × 1,200	1,600 × 1,200	1,760 × 1,168	1,632 × 1,232
Default memory	8MB	8MB	8MB	20MB	8MB
Removable-media format	CompactFlash	CompactFlash	CompactFlash	CompactFlash	CompactFlash
Storage capacity (in images) at maximum image size[C]	4–24	10–25	10–24	32–86	6–20
Optical-zoom function	yes (2×)	no	yes (3×)	yes (2×)	yes (4×)
Focal length (35mm-equivalent)	35mm–70mm	38mm	35mm–105mm	30mm–60mm	35mm–140mm
Built-in flash/external strobe hot sync	yes/no	yes/no	yes/yes	yes/no	yes/no
LCD preview/playback	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes
Solar-assisted LCD	no	no	yes	no	no
Optical viewfinder	yes	yes	yes	yes	yes
Rechargeable batteries with charger	yes[D]	yes[E]	yes[E]	yes[E]	yes[F]
Macintosh connectivity	serial, USB	serial, USB	serial, USB	serial, USB	USB
Lens cover	yes	yes	yes	yes	yes
Includes camera case	no	yes	no	no	no

[A] *Excluding interpolation.* [B] *Includes both expandable and on-board memory.* [C] *Varies according to compression.* [D] *Custom cell with external charger.* [E] *Standard NiMH AA cells.* [F] *Custom cell charges inside camera.*

the C-2500L captures more pixels than any other camera in its class, it has a habit of blowing out skies on sunny days. Both Nikon's Coolpix 950 and Kodak's DC265 (see "Digital Cameras Develop," September 1999) do a better job of metering bright light.

Small Is Beautiful

The primary advantage of the C-2500L's competitors is affordability; all vary from $699 to $799. The other advantage is size. The smallest of the bunch, Epson's PhotoPC 800, weighs half as much as the bulky C-2500L and takes up one-third the space. Some guys' wallets are bigger than the PhotoPC 800, yet it includes the amenities we've come to expect, including a built-in flash, LCD preview, USB connectivity, and rechargeable batteries. We also appreciated its locking power knob and lens cover, both of which prevent the camera from turning on when you toss it into a pocket or purse. The downside is the lack of a zoom lens and the camera's reliance on a meager two AA batteries; it sometimes ran out of juice after fewer than a dozen shots.

If you want small, the preferable device is Canon's PowerShot S10. Just two ounces heavier than the PhotoPC 800, it has all that camera's niceties plus a 2× optical zoom. It also shoots more-vivid pictures than does the PhotoPC 800, although it has a habit of blowing highlights in bright light. And finally, the custom rechargeable battery lasts long enough to shoot 100 or more pictures. Canon even throws in a disposable battery in case you need to shoot while the primary battery is charging.



KOSSIO TOLOSSO/ARNOLD

Olympus Camedia C-2500L

The Also-Rans

From the pocket-size models, the cameras grow incrementally from the Ricoh RDC-5000 to the Kodak DC280 to the camcorder-shaped Kyocera Samurai 2100DG. Larger still are the Epson PhotoPC 850Z (not to be confused with the diminutive 800) and the Toshiba PDR-M5, both of which sport protuberant lenses. The first three medium-size cameras rank as our least favorites, despite their slightly higher-than-average resolutions.

The Ricoh suffers from a clunky design and a grainy LCD preview. The Kodak camera's preview was possibly worse—in the model we tested, the LCD image was partially hidden behind the edge of the plastic housing. The camera is also slow to turn on and off. But the worst of the lot is the Kyocera camera. The LCD preview does a poor job of tracking movement; the picture quality is flat and drab; and if you're not careful, you can change a critical preference setting when taking advantage of the 4× zoom function. The one upside is that it ships with an ingenious USB adapter for downloading images from the CompactFlash card. But if you own an older Mac, beware—the USB connection is your only method for transferring images.

The remaining cameras, Epson's PhotoPC 850Z and Toshiba's PDR-M5, are both respectable entries. The PDR-M5 feels great in your hands, and despite taking up more space than any camera but the Olympus C-2500L, it weighs just an ounce more than the Canon PowerShot S10. Typical of Toshiba hardware, the controls are easy to use, the battery charges inside the camera, and the LCD tracks smoothly.

But Epson provides more camera for your money. Although it's heavier, the PhotoPC 850Z includes a hot-shoe for an extension flash, a locking power knob, and a solar-assisted LCD screen that's easier to view under intense light. The Toshiba camera takes good-looking pictures, but photos taken by the PhotoPC 850Z are crisper and brighter, with less need for color correction and editing.

Olympus	Ricoh	Toshiba
Camedia C-2500L	RDC-5000	PDR-M5
♦♦♦♦	♦♦½	♦♦♦
$1,499	$699	$799
516/844-5000 www.olympus.com	702/352-1600 www.ricohcpg.com	949/461-4970 www.toshiba.com
2.50	2.36	2.14
1,712 × 1,368	1,792 × 1,200	1,600 × 1,200
32MB	16MB[B]	8MB
CompactFlash, SmartMedia	SmartMedia	SmartMedia
4–55	9–38	8–33
yes (3×)	yes (2.3×)	yes (3×)
36mm–110mm	38mm–86mm	40mm–120mm
yes/yes	yes/no	yes/no
no/yes	yes/yes	yes/yes
no	no	no
yes (SLR)	yes	yes
yes[E]	no	yes[F]
serial	serial, USB	serial, USB
yes	yes	yes
no	yes	no

Macworld's Buying Advice

Given the rapid advancement in digital-camera capabilities, people often want to know when it will be "safe" to buy one. Will today's two-megapixel camera be obsolete six months from now? We don't have a crystal ball, but it's likely the technology will continue rolling forward for several years to come. That said, none of this new batch quite matches Nikon's Coolpix 950, which—almost a year after its introduction—provides higher picture quality, more flexibility, and better value than any camera in its class. Clearly, the Olympus Camedia C-2500L's high resolution and single-lens–reflex design make it a strong contender, but its high price is likely to give pause to all but the most well-funded ad agency. If portability is worth a slight trade-off in picture quality, Canon's PowerShot S10 is a well-crafted, palm-size device you can toss into a bag on a moment's notice. But the Coolpix 950 is still the champ.—DEKE McCLELLAND

iMac DV

MIDRANGE CONSUMER MAC IS TUNED FOR VIDEO

APPLE THINKS CONSUMERS ARE ready to embrace desktop video in a big way. And to serve them, the company has crafted a new iMac that improves on earlier models in terms of speed, storage, graphics performance, and sound quality.

The iMac DV—the only new iMac model available in five flavors—occupies the middle ground in Apple's new consumer lineup, packing more features than the entry-level $999 blueberry iMac while carrying a lower price tag than the premium iMac DV Special Edition (see "The iMac Is Back," January 2000). For $1,299, you get a 400MHz PowerPC G3 CPU with an ATI Rage 128 graphics accelerator, 64MB of RAM, a 10GB hard drive, a DVD-ROM drive, an RGB video-out port for external monitors, two FireWire connections, and two independent USB ports. By comparison, the $1,499 iMac DV Special Edition sports 128MB of RAM and a 13GB hard drive. Both DV models include Apple's iMovie video-editing software.

All those budding Hollywood directors should be happy with the iMac DV's performance. Macworld Lab tests showed that the midrange model ran about as fast as its high-end sibling and considerably faster than the previous-generation 333MHz iMac (see "The New Generation"). Thanks in part to the ATI Rage 128 chip, graphics performance was especially impressive: in our Quake II tests, the iMac DV delivered more than twice as many frames per second as the previous iMac. When playing games with intensive 3-D graphics, we noticed that video quality was superior to that of previous models, and the built-in Harman Kardon speakers sounded great—for built-in speakers.



ARNOLD TIOSSEO

One of the iMac's hallmarks is its industrial design. The new models are not as deep as the earlier ones, but the most noticeable difference is a transparent body with brighter plastics; previous models had a frosted, translucent exterior.

The new model has a few flaws. Its 64MB of RAM, while sufficient for running most business applications, falls short of what you'll need for desktop-video applications. Even Apple's bundled iMovie software won't run under 64MB unless you turn on virtual memory. Fortunately, memory is easy to add, thanks to a more accessible memory slot in back.

As with the iMac DV Special Edition, we could not restart the computer with both a USB Iomega Zip drive and an Epson Stylus Photo 1200 printer attached. And the iMac DV sometimes failed to recognize a connected FireWire hard drive without restarting. The new slot-loaded DVD-ROM drive is convenient, but it occasionally had problems ejecting disks properly. There's also the matter of the oft maligned round mouse.

However, the iMac DV's biggest problems pertained to DVD-ROM playback: video and audio consistently went out of sync during DVD movies, and the video dropped frames and became pixelated when we accessed the DVD player's controls. Apple says a software fix for the syncing problem is in the works.

Macworld's Buying Advice

Although it costs $300 more than the entry-level iMac, the iMac DV delivers a lot for the extra money, including two FireWire ports, a DVD-ROM drive, RGB video out, more storage, and a faster processor, not to mention the iMovie software and a choice of colors. Deciding between an iMac DV and an iMac DV Special Edition is more difficult. The premium model offers more disk storage and memory—and you will need the extra RAM, especially if you want to run desktop-video applications. However, both models deliver similar performance. If you like your iMacs in fruit flavors, buy an iMac DV and beef up the memory. Otherwise, the Special Edition is a better choice for desktop-video enthusiasts—and both models will be better still when Apple fixes the DVD-playback problem.—FRITH BREITZER

RATING: ▮▮▮▮ **PROS:** Better graphics and sound than earlier models'; built-in FireWire connections and DVD-ROM drive. **CONS:** Choppy DVD playback; unergonomic mouse and keyboard. **COMPANY:** Apple Computer (800/795-1000, www.apple.com). **LIST PRICE:** $1,299.

Macworld LAB TEST

The New Generation

Best results in red. *Reference systems in italics.* **MacBench 5.0 scores are relative to those of a first-generation Power Mac G3/300, which is assigned a score of 1,000 in each test.**

	MACBENCH 5.0			QUAKE II
	Processor	Disk	Graphics	Frames per Second
Apple iMac DV 400MHz	1,132	1,594	2,565	37
Apple iMac DV 400MHz Special Edition	*1,139*	*1,521*	*2,588*	*37*
Apple iMac 333MHz	*948*	*1,306*	*1,426*	*17*
Apple Power Macintosh G3 400MHz	*1,314*	*1,398*	*2,859*	*46*

Longer bars are better.

Behind Our Tests

We tested the systems with Mac OS 8.6, 64MB of RAM (128MB for the iMac DV Special Edition), a 2MB system disk cache, and virtual memory disabled. We tested Quake II at a resolution of 640 by 480 pixels with 128MB of RAM in all systems.—**Macworld Lab testing supervised by Gil Loyola**

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Handspring Visor Deluxe

MAC-FRIENDLY PALM CLONE IS A GOOD VALUE

IN 1998, JEFF HAWKINS, INVENTOR of the PalmPilot organizer, left Palm Computing to found a rival palmtop maker called Handspring. The high-tech world held its breath. What could top the elegant simplicity of his first creation? What could Hawkins and his team possibly build for an encore?

The answer: a PalmPilot clone.

In most regards, Handspring's exciting but oddly named Visor is identical to a Palm-branded handheld. It uses the same OS; can run the same 20,000 add-on programs; and sports the same four buttons that launch your calendar, phone book, to-do list, and memo pad. And as with any Palm computer, pressing a button on the included cradle synchronizes the palmtop with your Mac's calendar and phone-book software. The Visor runs for two months on a pair of AAA batteries, beams information by infrared, and doubles as a travel alarm—just like traditional Palm PDAs.

Subtle Improvements

The Visor is noticeably faster than Palm devices. When you write with the Graffiti block-printing alphabet, each letter appears nearly instantly. The optional Date Book Plus program adds several powerful features to the traditional Date Book, including two-week, list, and year views, as well as the ability to view to-do's and appointments simultaneously. The four-function Calculator is similarly beefed up, now offering a scientific mode.

However, what sets the Visor apart isn't on the screen but, rather, behind it: the back half of the device pops out, exposing a cartridge slot. Into this space you can insert what's called a Springboard module—a black plastic cartridge that contains its own self-launching, self-configuring software. Handspring says there are 50 such modules already under development by various companies. Some contain nothing but extra RAM (such as Handspring's $100 8MB expansion module) or software (such as e-book collections, foreign-language dictionaries, and so on).

Others do fancier hardware tricks. In the works are a standard modem, wireless modem, pager, Bluetooth wireless network module, digital camera, thermometer, MP3 player, GPS (Global Positioning System) receiver, voice recorder, and cell phone. The irony is delicious. Among the features Hawkins stubbornly resisted putting into the original Pilot, in the name of simplicity and low cost, was an expansion slot. Now it's the Visor's biggest selling point.

As of this writing, the Springboard concept remains but a thrilling possibility. The only third-party module currently



GIBSON

available is Electronic Arts' Tiger Woods Golf game. The game runs the instant you plug the module into the Visor—plug and play, just as Springboard modules are supposed to be—but otherwise it's not much of a technology demo. Navicom's GPS receiver elicits audience gasps at trade shows, updating on-screen maps as you drive—but it's still only a demo. You'll have to wait until March 2000 for a decent catalog of actual shipping modules; the day when you'll pull out your Visor's antenna and make a cell-phone call is even more distant.

The Visor Economy

On the other hand, you don't pay extra for the Springboard slot. The basic 2MB Visor costs exactly the same as Palm's 2MB Palm IIIe: $179. (Without its sync cradle, a Visor is $30 less.) Better yet, the $249 Visor Deluxe, which comes with 8MB of RAM, is $200 less than Palm's 8MB model, the Palm Vx.

In some ways, the cost-cutting measures show. The Visor's case is boxy and feels cheap—a leap backward from the graceful lines of Palm's handhelds, especially the attractive, ultrathin, brushed-aluminum Palm V. The Visor's scroll buttons don't have indentations for your stylus, as the Palm's buttons do, so you must use your thumbs to scroll. Instead of the handy flip-up cover of the Palm III line, the Visor cover is a separate, easy-to-lose piece that you must snap onto the back of the device when using it. And you don't get a printed manual.

More worrisome: Unlike Palm handhelds (except the IIIe), the Visor doesn't contain flash RAM. That means you can't upgrade the device as new OS versions, such as Palm OS 3.3 or the recently announced Palm OS 3.5, become available. You're stuck with Palm OS 3.1 forever.

But for Mac fans, the Visor Deluxe is still especially attractive. For starters, the cradle is a USB device, which speeds synchronization and saves modern-Mac owners the $40 Palm users must pony up for a USB adapter. (Conversely, you can buy a non-USB Visor cradle for your older Mac for $20.) The Palm Desktop software—the Mac calendar and phone-book programs that exchange data with the Visor—is included on the Visor CD-ROM. (Palm Computing charges $10 extra for a Mac CD, or offers Palm Desktop as a *long* Web download.) And the Visor Deluxe is available in four translucent iMac-style colors.

Macworld's Buying Advice

Buy a Palm device if you value looks and OS upgradability. Buy a Visor Deluxe if you value money and you look forward to Springboard modules. Either way, you've already benefited from the Handspring Visor. Its introduction has triggered giant price cuts by Palm Computing, further weakened Microsoft's attempts to market Windows CE palmtops, and given Mac fans a delightful dilemma: a choice between two outstanding Palm OS PDA families.—DAVID POGUE

RATING: ♦♦♦♦ **PROS:** Less expensive than Palm handhelds; enhanced software; expansion slot; USB cradle. **CONS:** OS is not upgradable; cover is not attached; no manual. **COMPANY:** Handspring (888/565-9393, www.handspring.com). **LIST PRICE:** $249.

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FileMaker Pro 5.0

GOOD DATABASE, RESTRICTIVE WEB FEATURES

WITH FILEMAKER PRO 5.0—the first major release of this program since Claris transformed into FileMaker Inc.—FileMaker Pro retains its traditional strengths and gains a new interface and decent workgroup features. However, version 5's Web-publishing capabilities offer less flexibility and far less accessibility than those in FileMaker 4.

FileMaker Pro 5 looks like Microsoft Office 98, and that's no coincidence: FileMaker's menus have been rearranged to match Office's, and the application's two tool bars are nearly icon-for-icon knockoffs of those in Microsoft Word and Excel.

There's even an Office-like wizard to help you create new layouts, including a Table view, reminiscent of a spreadsheet, that lets you quickly sort, resize, and reorder columns. This view might be handy if you're used to keeping data in a spreadsheet rather than in a database, but it's rough around the edges. Reordering Table columns unleashes a barrage of beeping dialog boxes. Furthermore, a Table view's appearance is controlled by *themes* (appearance definitions stored separately from the database as XML files) rather than standard formatting tools—something sure to frustrate Mac database authors, as the themes all have a Windows look-and-feel.

Users of previous versions will appreciate the fact that FileMaker 5 can merge imported records using a match field; you can take a database on the road with your PowerBook and then sync any changes to the original on your iMac. Database authors will like the resizable ScriptMaker and Define Fields dialog boxes (though Calculation dialog boxes remain fixed); expanded color selections; and new layout effects, such as embossing—these would be a chore to create by hand.

You must convert existing FileMaker databases to FileMaker Pro 5—not a big deal—but earlier versions of FileMaker can't read databases created with FileMaker 5. Version 4.1 let users import data from ODBC databases, such as Microsoft Access, and manipulate it within FileMaker, but version 5 goes the other way: it can be an ODBC data source, so users of other tools can import data from FileMaker. However, FileMaker Pro 5 doesn't offer full ODBC Level 2 support and can't be a live front end to an ODBC database.

Version 5 is still missing some long-requested features, such as event-triggered scripts. It can't save or cache found sets, and it's still not multithreaded, which greatly hampers its Web-serving and data-sharing capabilities.

Web-Side Story

FileMaker Pro 4 offered database authors basic Web publishing capabilities through the included Web Companion plug-in (see "FileMaker Hits the Web," December 1997). Although Web Companion could enable anyone on the Internet to view and search databases, update and add records, or delete information, using it effectively was awkward, requiring careful design of FileMaker-customized HTML files.



Seeing Isn't Believing This Web page, created in FileMaker Pro 5.0, lacks information present in simpler views, and the buttons don't work.

The good news is that all the tag-tweaking is gone in FileMaker Pro 5—and that's part of the bad news, too. Version 5's Web Companion plug-in offers Instant Web Publishing, which translates FileMaker Pro layouts to the Web on-the-fly. Instant Web Publishing takes advantage of Cascading Style Sheets (CSS) and JavaScript to render FileMaker Pro layouts in a Web-browser window with stunning accuracy, using a selection of themes similar to those of the new Table view. You can also restrict Web access to particular Internet addresses within FileMaker Pro. But Web Companion has its share of problems (see "Seeing Isn't Believing"). The only Mac browser that supports Web Companion's sassy layout rendering is Microsoft Internet Explorer 4.5, which also offers reasonable support for CSS. Netscape Communicator 5.0 may also work (when it's released), but in the meantime Communicator 4.X and other browsers get error messages or a generic display reminiscent of the old Web Companion.

What's worse, those handsomely rendered layouts are only skin deep: they may truncate or omit information displayed in simpler views, and a layout's functions—such as buttons, conditional value lists, and scripts—won't work, even though they're on the screen.

Unfortunately, you cannot use Web Companion's custom tags to fix this problem, because Instant Web Publishing does all the work. The only way to modify your database's Web appearance is to craft a layout, through trial and error, that translates adequately for your users. So much for instant publishing.

Speaking of users, Web Companion permits access from only ten Internet addresses in any 12-hour period. If that's not sufficient, you'll need FileMaker Pro 5 Unlimited, which had not been released at press time; it should offer a wider range of custom tags than FileMaker Pro 4.X—and a $1,000 price tag. Also, FileMaker Pro 5's license explicitly prohibits using the application with middleware tools, such as the Lasso Web Publisher bundled with StarNine's WebStar Server Suite. So if more than ten Web users access your databases, FileMaker Pro 5 is a giant step backward from FileMaker Pro 4.X.

Macworld's Buying Advice

FileMaker Pro 5 still makes sense as a single-user desktop database, and it's a good tool for sharing data among a small group on a local network. But if you publish to the entire Internet, or merely to more than ten people, FileMaker Pro 5 is a pointless upgrade—stick with version 4.X if you can, or look into the less-restrictive Web publishing features of FileMaker Pro 5 Unlimited.—GEOFF DUNCAN

RATING: ❦❦❦ **PROS:** Friendly relational database; quick authoring environment; revamped interface; business-workgroup focus. **CONS:** New features have limited appeal; new file format; Web-publishing capabilities from previous versions curtailed. **COMPANY:** FileMaker (408/987-7000, www.filemaker.com). **LIST PRICE:** $249.

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Action Utilities

REWORKED NOW UTILITIES IS AN EVEN SWEETER SUITE

MAC VETERANS WHO REMEMber Now Software's Now Utilities are likely to have bittersweet recollections of this fabled set of system enhancements. Early adopters may retain fond memories of Super Boomerang—the tool that let you easily navigate through volumes and folders from within the Open and Save dialog boxes—and Now Menus, a control panel that extended these navigation powers to the desktop through the addition of user-configurable menus.

Alas, these same users were surely disenchanted when elements of Now Utilities ceased to function with newer versions of the Mac OS—or became so unstable that they were more hindrance than help.



Taking Action Configure all your Action Utilities from a single control panel.

Thankfully, Power On Software resurrected and enhanced the best parts of Now Utilities; made them compatible with the latest Mac OS updates; and released, in single form, Action Files, Action Menus, and Action WYSIWYG. Now Power On has bundled these three utilities with Action GoMac (a utility that places a Windows-like Start menu and Task Bar on your Mac's desktop), slapped a $90 price tag on the suite, and dubbed it Action Utilities. Considering its reasonable price—$110 less than the four utilities sold separately—and the fact that at least three of the utilities are extremely useful, it's a compelling product.

The initial release of Action Utilities isn't quite an integrated whole—there's no single installer, serial number, or manual. You must install each utility separately, enter a discrete serial number for each one, and sift through four separate manuals. Power On said it will resolve these issues in an update that should be available by the time you read this.

Fortunately, the utilities aren't as dissociated once they're installed on your hard drive. You can control the settings for each utility from within a single control panel. To modify a utility's settings, simply click on its icon and then click on one of the settings tabs.

Action Files

When we last reviewed Action Files (see *Reviews*, July 1998), we mentioned that it added new functionality to the File menu's Open and Save As commands. It added hierarchical menus that listed favorite and recently accessed files and folders. It also made the Open and Save dialog boxes resizable, and within those same dialog boxes it added a Find command and provided Finder-like functions. For example, Action Files lets you create folders and aliases; rename and duplicate files; and view files by name, date, size, and type.

Power On has introduced a few changes since then. The utility now supports Apple's Navigation Services—the new Open and Save dialog boxes introduced with Mac OS 8.5. Regrettably, the design of these new dialog boxes is at odds with Action Files: if you invoke the Find command in a new Open or Save dialog box, Sherlock appears rather than Action Files' own Find dialog box—and the Open or Save dialog box closes. Despite this annoyance, we're relieved that Power On made Action Files compatible with Navigation Services, and we believe Apple should fold Action Files' features into a future version of the Mac OS.

More Good Stuff

Action GoMac 2.0.3 is almost unchanged from the version we reviewed last year (see *Reviews*, June 1999). This utility mimics and improves on Windows' Start-menu, Task Bar, and Clock Tray features, giving you quick access to recently accessed items, currently running programs, and your favorite applications. A powerful substitute for Apple's Launcher and Application menu, Action GoMac is well worth having.

Action Menus is the third useful component of Action Utilities. It lets you create custom menus for quick access to recently used applications, files, and folders; currently running applications; local and networked volumes; and open windows.

Granted, Action GoMac makes some of this functionality redundant. But Action Menus offers some other goodies. You can add items to the Apple menu by dragging them from the desktop or an open window into the Apple menu. And you can easily assign custom key commands in applications—assign ⌘-T to the Empty Trash command in the Finder, for example—by selecting a command with the mouse and pressing the desired key combination. Note, however, that the assignable Function Key option within Mac OS 9's Keyboard control panel (supported by the G4, iBook, and iMac) takes precedence over Action Menus' key commands.

Action WYSIWYG replaces the font menu within each application with its own font menu. While viewing font names in multiple columns, in their true typefaces, and in family groups—and creating custom font sets for individual applications—may be a godsend to graphic designers and desktop-publishing mavens, users without a wealth of fonts may find Action WYSIWYG less useful than the suite's other three utilities. Although we like being able to view fonts in different colors and sizes, Action WYSIWYG is more of a bonus than a necessity.

Macworld's Buying Advice

For those who mourned the passing of Now Utilities, we're pleased to announce that an enhanced, stable, and affordable version of these venerable tools is now available in a single package. If you missed Now Utilities and wondered what all the fuss was about, perhaps it's time to leap into Action.—CHRISTOPHER BREEN

RATING: ♦♦♦♦ **PROS:** Convenient navigation features; extensive drag-and-drop support; adds needed enhancements to Open and Save dialog boxes. **CONS:** Lost functionality with Navigation Services; no single installer, serial number, or manual; some redundancy. **COMPANY:** Power On Software (800/344-9160, www.poweronsoftware.com). **LIST PRICE:** $90.

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Kate Hunter
Dancer

Address Book

Three choreographers I'd kill to work with; Paris # for Francois.

Date Book

Ballet class 10:00 am; physical therapy at 4:00 pm; dinner w/Mark, 7:30 pm.

Memo Pad

The Times review of my performance; notes on Balanchine bio.

To Do List

Buy another half-dozen leg warmers; roses to Katya for premiere (hey, who's jealous).

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e-Picture

WEB-BANNER APP DECENT BUT QUIRKY

TIRED OF COBBLING TOGETHER Web animations with Adobe Photoshop? Take a look at BeatWare's new e-Picture, a vector-based application designed specifically for creating Web banner ads and small animations. Although it's far from perfect, it offers a decent selection of drawing and animation tools well suited for the task.

Familiar Face

If you use a traditional print program such as Photoshop or Macromedia FreeHand, you'll find e-Picture's context-sensitive Inspector palette and tabbed palettes familiar. But don't let looks fool you: e-Picture is very much a Web-graphics utility. Its New Document dialog box, for example, provides a pop-up menu of standard Web-banner and -button sizes.

The Tool palette displays the usual suspects—an assortment of graphics primitives, along with the paintbrush, pencil, paint-bucket, and pen tools. Because e-Picture is vector-based, when you paint a stroke, the program actually creates a vector outline of it. As in Macromedia Flash, this approach gives you all the painterly effects of pixel-based programs, plus the editing power of vector-based illustration. For example, you can change the shape, color, or scale of an object at any time without creating jagged edges or resampled artifacts.

The Inspector palette lets you easily manipulate object properties such as color and line width. e-Picture also sports a nice selection of painterly filters and effects—such as glows, bevels, and blurs—that you can apply to an object. Although e-Picture doesn't support standard Photoshop plug-ins, its own plug-ins are more than adequate for most Web-animation effects.

You get tools for standard text and text on a path, and you can control the font, size, fill, and stroke color. But there are no kerning controls—a major omission in a program that will be used predominantly for creating text elements.

e-Picture provides full layer-agent compositing controls. In addition to standard luminance, hue, and logical blending modes, you can also use alpha channels. However, this feature is somewhat buggy—the program often misinterpreted the mask information.

e-Picture can import bitmapped images in a variety of formats. You can't edit the images, but you can place them on layers and animate them with the program's animation tools. Be careful when you import bitmapped files: large, high-resolution files can quickly bring e-Picture to its knees.

While there's a lot to like in e-Picture, its drawing interface can be frustrating, thanks to several nonintuitive or nonstandard components. For example, once you select the text tool and begin typing text, you can't change any text attributes. Instead, you must finish typing and then change the object's attributes in the Inspector palette. The color picker is also somewhat confusing, requiring double clicks where most programs require single clicks. Quibbles? Sure. But these factors are intrusive enough that you'll find yourself focusing more on the program's mechanics than on your design.



e-Picturesque e-Picture's basic tools let you quickly create simple, keyframed Web animations.

Moving Pictures

Because Web banners must be small and simple, the animations within them must be compact and composed of a small number of frames. For the most part, e-Picture's tools are just right for this level of animation.

You can use the program's basic animation tools to set keyframes for an object; e-Picture then generates all of the intervening frames to create a smooth animation. But the program's biggest animation strength is its ability to animate every property of an object—its position, scale, line width, and color, as well as any filters and effects applied to the object. Thus, it's easy to create drop shadows that change depths, glows that pulsate, and bevels that deepen and thicken.

e-Picture also lets you add 3-D animations to your banners. Although the program has no 3-D–modeling tools, it can quickly render small 3-D models created in NewTek LightWave 3D or any DXF-compatible modelers. You can animate the position, rotation, and skew of these models just as you can any other property.

As with the drawing interface, e-Picture's animation interface causes its share of annoyances. For example, when you drag a graphic from one location to another to set a keyframe, e-Picture doesn't display a motion path, making it extremely difficult to accurately place the graphic. Expect to do lots of undoing. Furthermore, the program doesn't offer automatic controls for acceleration or deceleration, or for creating motion along a curve. We'd also like a simple motion-blur feature.

e-Picture supports the GIF, JPEG, and PNG file formats. e-Picture's export window—like those of Adobe ImageReady and Macromedia FireWorks—can be split to let you view the results of different compression algorithms side by side. And like ImageReady and FireWorks, e-Picture can also generate and export animated Java rollover buttons.

Macworld's Buying Advice

There's nothing revolutionary about e-Picture, but it gives designers a solid, mostly well conceived environment for creating simple Web animations. Despite its quirks, e-Picture is a decent, affordable tool for those who make their living producing banner ads.—BEN LONG

RATING: ♦♦♦½ **PROS:** Streamlined interface for creating simple Web animations; nice mix of paint and vector tools. **CONS:** Interface has its nonintuitive moments; no visible motion paths; no motion-blur or velocity controls. **COMPANY:** BeatWare (650/556-7900, www.beatware.com). **LIST PRICE:** $199 (downloadable version, $179).

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FireWire PC Cards

NEWER, RATOC CARDS BRING FIREWIRE TO THE POWERBOOK

FIREWIRE IS THE BEST HARDware interface for Digital Video (DV) camcorders and other peripherals that require high-speed data connections. Until recently, however, FireWire devices were trapped on the desktop due to the lack of FireWire ports in Apple's PowerBooks. Now, thanks to FireWire PC Cards, you can connect FireWire devices to any G3 PowerBook running at 300MHz or faster.



SUZANNE ROADY

Newer Technology's FireWire 2 Go

Macworld Lab looked at two $149 FireWire CardBus cards: the FireWire 2 Go, from Newer Technology, and the CBFW2, from RATOC Systems. The RATOC card is faster and works with unpowered peripherals, but Newer provides better technical support. Orange Micro and VST Technologies have also announced FireWire cards, but neither arrived in time for testing.

Both cards are a cinch to install: you run an installation program that copies the needed extensions to your System Folder, reboot the PowerBook, and plug the card into the PC Card slot. Along with the driver software, Newer provides QuickTime 4 Pro (a $30 value), which you'll need if you want to capture video directly from a DV camcorder.

We tested the cards' performance using a DV camcorder and a FireWire hard drive. On our 333MHz PowerBook G3, both cards successfully captured video from a Canon Elura camcorder and then copied the edited video back to the camera.

When writing a 1GB QuickTime movie to a FireWire hard drive, the RATOC card was the speed champ, taking 3 minutes, 23 seconds compared with 3 minutes, 53 seconds for the Newer card. However, neither card could keep up with a FireWire-equipped blue-and-white Power Mac G3, which copied the file in 2 minutes, 27 seconds. When the cards were reading from the drive, the difference narrowed considerably, with each taking about 3.5 minutes.

The RATOC card owes much of its faster performance to its Lucent FireWire chip set; the Newer card uses the older Texas Instruments Lynx chip set found in Apple's Power Mac G3.

The RATOC card also includes a connection for standard power adapters, allowing the use of FireWire devices that rely on the host system for power. Desktop Macs can power FireWire devices through the cable, but you can't do this with a PowerBook—even one that's plugged in—because it would overheat the PC Card. RATOC gets around this limitation by placing the power jack on the dongle used to connect FireWire devices to the card. The Newer card lacks a power connection.

Although the RATOC card is faster and offers more features, the Newer card is backed by superior technical support. Newer offers a toll-free support number and extensive technical information on its Web site; RATOC's manual does not list any support contacts.

Macworld's Buying Advice

RATOC's CBFW2 card gets the nod for its faster performance and standard power connection, which allows the use of unpowered FireWire devices. However, if you're a novice user who needs some handholding, you may find that Newer's superior technical support compensates for the FireWire 2 Go card's limitations.—KEVIN MITCHELL

CBFW2

RATING: ●●●½ **PROS:** Fast; comes with power connection. **CONS:** Limited technical support. **COMPANY:** RATOC Systems (408/955-9229, www.rexpccard.co.jp). **COMPANY'S ESTIMATED PRICE:** $149.

FireWire 2 Go

RATING: ●●● **PROS:** Good technical support. **CONS:** Relatively slow; no power connection. **COMPANY:** Newer Technology (316/943-0222, www.newertech.com). **COMPANY'S ESTIMATED PRICE:** $149.



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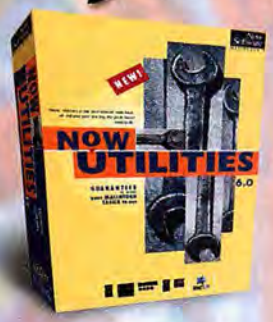
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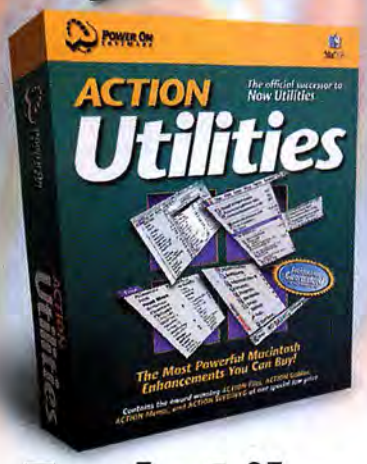
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Toast 4.0 Deluxe

CD-RECORDING SOFTWARE

LOW-PRICED CD RECORDERS, and the proliferation of downloadable music files on the Web, have made it easier than ever for consumers to create their own audio CDs. Adaptec shows it has paid attention to this trend by adding impressive audio capabilities to Toast 4.0 Deluxe, the latest version of its already excellent general-purpose CD-recording program.

While previous versions of Toast let you create audio CDs, version 4 simplifies the process and provides features that make your CDs sound more professional.



Now Hear This Toast 4.0 Deluxe's new audio features let you record professional-sounding CDs.

One such feature, also found in high-end music recording programs such as Adaptec's Jam, is disc-at-once (DAO) mode, which lets you make CDs without audible gaps between tracks.

In earlier versions, Toast instructed the CD burner's laser to turn off between tracks, producing a brief but noticeable silence. With DAO, you can select zero seconds of pause and actually get no pause. This is especially useful if you're making a CD of songs that flow into one another, such as a dance mix or a recording of a live concert. (Check your CD recorder's technical specifications to see if it supports DAO.)

Toast 4 lets you burn MP3 audio directly to CD with on-the-fly decoding. This lets you make an audio CD from MP3 files without having to convert them first to another audio-file format. This is particularly useful if you're low on hard-drive space, as MP3 files are comparatively small. Unfortunately, the decoding feature does not support DAO. But if hard-drive space isn't an issue, you can use QuickTime 4 or Rafael W. Luebbert's free Mpecker Drop Decoder to expand MP3 files to AIFF on your desktop, and then use DAO mode when burning your CD.

Because burning MP3 files onto an audio CD can tax a processor, Adaptec recommends that you use a G3/300 with a 4×-speed CD recorder. However, if you burn at 1× or 2×, you can get away with less processor power.

Another great new feature is CD Spin Doctor, a utility that transfers analog LPs or tapes onto CD. You simply connect your turntable amplifier or tape deck to your audio-in port using the included cable. You can even pause CD Spin Doctor to flip over your cassette tape or vinyl LP. But be careful—if you accidentally hit Stop, the session closes and you cannot add to it. Also, because the Discard button is placed a little too close to the Save button in the Save dialog box, it's all too easy to trash your recording unintentionally.

CD Spin Doctor saves a full LP transfer as one large file. The helpful Auto-Define Tracks feature then detects silence between tracks and creates individual files of your songs. You can also manually define tracks and set crossfades.

Toast makes it easy to clean up old recordings by providing simple filters that reduce static, hiss, and other noise. You can preview the filters in real time, but once you apply a filter, you can't undo it.

Toast 4 supports USB-connected CD drives, and Adaptec promises FireWire support in Toast 4.0.1. Thanks to a new feature called Web Checkup, you can easily download upgrades from Adaptec's Web site.

Macworld's Buying Advice

Toast 4.0 Deluxe's new features make it a particularly good choice if you have audio files you want to record on CD media. Unlike with other versions of Toast, you won't find it bundled with any CD recorders, but $99 is a small price to pay for this feature-rich upgrade.—JONATHAN SEFF

RATING: ♦♦♦♦ **PROS:** Supports DAO; can record MP3 files directly to CD; decent audio filters; good price. **CONS:** Too easy to delete work in CD Spin Doctor. **COMPANY:** Adaptec (800/442-7274, www.adaptec.com). **COMPANY'S ESTIMATED PRICE:** $99.

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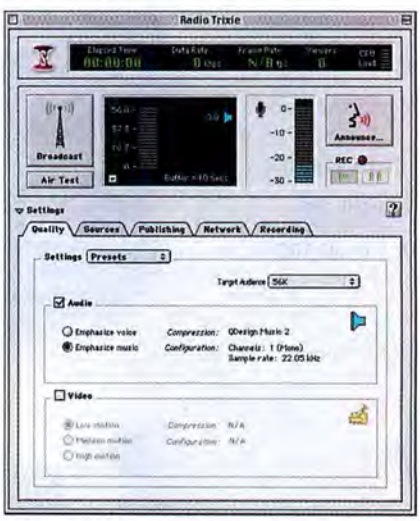
Expert Analysis of the Inside Story

Sorenson Broadcaster

VERSATILE ENCODING FOR QUICKTIME STREAMING

APPLE'S QUICKTIME 4.0 IS THE first QuickTime version to permit streaming of live content, such as radio or television feeds, convention speeches, and conferences. But while QuickTime Streaming Server can dish out live streams, it can't encode them. In broadcasting terms, QuickTime Streaming Server is merely a transmitter; it needs an incoming signal to beam out.

And that's where Sorenson Broadcaster 1.0 beams in—it lets you compress live audio and video signals into QuickTime streams. It's a versatile, well-designed tool, although the first version has a few rough edges and abysmal documentation.



Window into Streaming Sorenson Broadcaster 1.0's single window offers extensive controls.

Air Time

Sorenson recommends running Broadcaster on a Power Mac G3, but you may be able to get away with a less powerful machine. We did most of our testing on a 400MHz G3, but we also successfully encoded 28.8-Kbps voice and music streams using an elderly Power Mac 7600/132. Regardless of your Mac's configuration, you don't need additional hardware to encode audio-only content: just plug your audio source into your Mac's input jack. To encode video, you need a Broadcaster-compatible capture card—a list of qualified cards is available on Sorenson's Web site.

A key part of streaming involves choosing compression settings appropriate to your content and to your audience's connection speeds. Sorenson Broadcaster's presets make this job a breeze, and a Customize button lets you tweak settings. After choosing compression settings, you specify the name of the broadcast as well as copyright information. Then you enter the Internet Protocol (IP) address of the QuickTime Streaming Server you'll be using to replicate the stream for listeners.

If your audience is connected to a local area network rather than the Internet, Sorenson Broadcaster offers a multicast mode. Multicasting uses network bandwidth efficiently by letting all users on your network "tune in" to one stream. And multicasting doesn't require QuickTime Streaming Server—all you need is Sorenson Broadcaster.

Sorenson Broadcaster can also archive a live stream to disk. This lets you save a live event for subsequent on-demand delivery using QuickTime Streaming Server. You can also archive live content without actually streaming it.

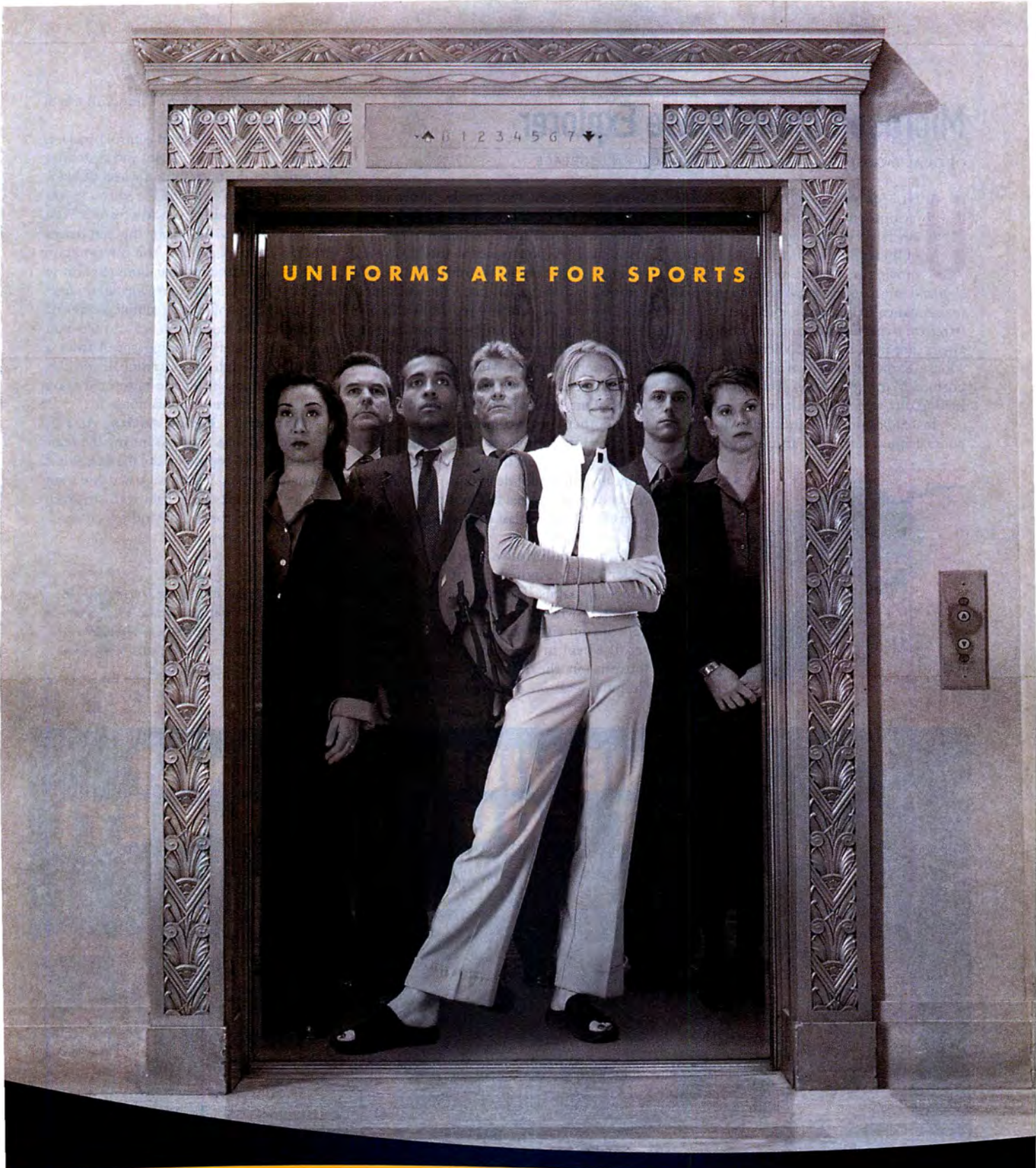
Before you can begin streaming, you have to *announce* the broadcast. This involves exporting, via Sorenson Broadcaster, a QuickTime movie containing URL and compression information, which your audience's QuickTime Players use to connect to the live stream.

If you're streaming over the Internet, you need to create a *reference movie*, stored on QuickTime Streaming Server, that points to the live stream. It's a simple process—or at least it would be if it were accurately documented. Sorenson Broadcaster's documentation is light on details and downright wrong in many places.

Macworld's Buying Advice

Sorenson Broadcaster has a few minor flaws. It lets you enter invalid IP addresses, for example, and it can crash if you enter some values incorrectly. But by and large, version 1.0 is a fine effort. If you're doing live QuickTime streaming, it's the only encoding tool you need.—JIM HEID

RATING: ♦♦♦½ **PROS:** Straightforward interface; supports multicasting. **CONS:** Some minor bugs; poor documentation. **COMPANY:** Sorenson Vision (800/954-7019, www.s-vision.com). **LIST PRICE:** $199.



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Microsoft IntelliMouse Explorer

OPTICAL MOUSE SEALS OUT DIRT, WORKS ON ANY SURFACE

UNLESS YOU WORK IN A NASA clean room, your mouse will eventually fall prey to mouse crud, a buildup of lint and other dirt in your mouse's moving parts that makes the cursor skip and jump on screen. Although periodic maintenance helps, some mice never seem to return to perfect working condition, even after a thorough cleaning. Microsoft's IntelliMouse Explorer, finally available for USB-enabled Macs, solves this problem by eliminating dirt-trapping components entirely.

Instead of the balls and rollers found in conventional mice, the IntelliMouse uses a novel system that tracks movement optically. (While this technology isn't new, previous optical mice required a special mouse pad.) As you move the IntelliMouse, an image sensor on the bottom of the mouse scans for minute variations in the work surface, which the sensor's red light illuminates. A digital signal processor in the mouse translates your movements into cursor motion on screen. Microsoft claims that optical tracking, in addition to avoiding the perils of dirt buildup on your roller, results in smoother cursor response.



SUZANNE ROADY

The IntelliMouse worked as advertised on just about everything I put under it—from my laminated desktop to plain paper to the top of my head. The optical sensor won't function on glass or any highly reflective surface, however.

The IntelliMouse sports a futuristic silver case designed to fit average-to-large-size palms. Two main buttons, which you press with the index and middle fingers of your right hand, flank a rubberized scroll wheel in the center. Two auxiliary buttons on the left side are meant for thumb operation, although the larger one is a bit awkward to reach. The scroll wheel doubles as a fifth button.

Microsoft's IntelliPoint control panel lets you change cursor sensitivity and customize operation of the buttons and wheel. (Oddly, the mouse doesn't include the software; you have to download it from Microsoft's Web site or request a CD from the company's Product Support group.) You can program buttons and button combinations to perform one of 15 different functions, including clicking, dragging, and typing simple keyboard shortcuts. The control panel also lets you adjust the wheel's scrolling speed from a single line to a full page at a time. If you like, you can even specify unique button and wheel settings for different applications.

Macworld's Buying Advice At $75, the IntelliMouse is by no means the least expensive USB mouse on the market. But if you hate cleaning your mouse and you want a device that looks like it belongs on the starship *Enterprise*, the IntelliMouse is an excellent choice.—FRANKLIN TESSLER

RATING: ♦♦♦♦ **PROS:** Doesn't require cleaning; works on almost any surface; multiple programmable buttons. **CONS:** Relatively expensive. **COMPANY:** Microsoft (425/882-8080, www.microsoft.com). **LIST PRICE:** $75.



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Corel Print Office 2000

FEATURE-RICH BUT SLOW DESKTOP-PUBLISHING SUITE FOR SOHO USERS

HEAVY-DUTY DESKTOP-PUBLISHING applications such as Adobe InDesign and QuarkXPress are often too complex and expensive for the needs of small-business or home users. Corel's Print Office 2000, a DTP package designed for SOHO users on tight budgets, offers a good solution. Unfortunately, its lackluster performance mars an otherwise welcome addition to the Mac marketplace.

The Print Office suite consists of two separate applications, Corel Print Office and Corel Photo House. Print Office, the workhorse of the duo, handles page-layout and design duties. To get you started, it comes with an array of document templates ranging from banners to business cards.

The Project window, which occupies most of the screen, displays the current document. (Alas, you can't display more than one page at a time, nor can you work with multiple documents simultaneously.)

DTP novices will appreciate the Notebook feature, which provides step-by-step instructions and context-sensitive tips. Less helpful are some of Print Office's menus and tool bars, which often present too many ways to perform a function.



Guided Tour Corel Print Office 2000's Notebook feature (left) offers helpful context-sensitive tips.

Photo House, an image-editing and painting application, shares the interface and context-sensitive guidance of its page-layout companion. Anyone who's ever used painting software will feel at home with most of the program's functions, which include a familiar suite of drawing tools.

Photo House's retouching effects, which correct common flaws such as red-eye and scratches, work well on scanned photographs. You can export to several file formats, including PICT, TIFF, Photoshop, and JPEG. You can also transfer images directly into a new or existing Print Office document. If you don't want to create images from scratch, you can mine the vast supply of photos, clip art, fonts, backgrounds, and borders included on two CDs—or download content from Corel's Web site without firing up a browser.

Unfortunately, Print Office 2000's performance on a 120MHz Power Mac 7500 was lackluster at best. (Corel recommends an iMac or Power Mac with 32MB of RAM and Mac OS 8.1.) The suite felt much snappier on a blue-and-white G3/400, but that's cold comfort for home and small-business users who often can't afford the fastest Macs.

Macworld's Buying Advice Despite its interface quirks, Corel Print Office 2000 is a winning combination, offering plenty of features at an irresistible price. If your desktop-publishing projects are limited to the occasional brochure or newsletter and your hardware is up to the task, it's worth a look.—FRANKLIN TESSLER

RATING: ▮▮▮ **PROS:** Inexpensive; context-sensitive help and guidance. **CONS:** Slow; interface can be confusing. **COMPANY:** Corel (800/772-6735, www.corel.com). **LIST PRICE:** $99.



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QuickCam Pro

VERSATILE, AFFORDABLE USB CAMERA

FIRST THINGS FIRST: LOGITECH'S QuickCam Pro won't send any digital cameras or camcorders to the breadlines. The latest version of the camera that first sprouted under the Connectix family tree can't touch the image quality and sharpness of a digital still camera or a camcorder. But the USB-only QuickCam Pro is more versatile than either device, ideal for snapping still images of your soon-to-be-auctioned Beanie Baby collection, for videoconferencing in conjunction with a product such as iXL's iVisit, for making QuickTime movies, or even for creating a Web cam. And the price is hard to beat: $150, including software for both Mac OS and Windows.

The QuickCam Pro shares its ancestors' unique shape: it looks like a cue ball with a lens. But while its predecessors sat awkwardly in a chintzy plastic stand, the QuickCam Pro includes a slick base that can sit atop your monitor or, via a spring-loaded mechanism, clamp onto a desk or shelf. You can also pop the ball out of its base and mount it on a tripod. The camera accepts snap-on lenses; Logitech sells a $20 lens kit that includes wide-angle and telephoto adapters.



Quick Self-Portrait The QuickCam Pro regards itself in a mirror.

As for software, the camera includes two simple programs. Cyberauctioneers will make good use of QuickPICT, which snaps still images, saving them to the Clipboard or to disk (see "Quick Self-Portrait"). QuickMovie captures QuickTime movies at frame sizes of up to 640 by 480 pixels and frame rates of up to 30 frames per second (fps)—expect rates closer to 15 fps on most Macs. A time-lapse feature can snap an image at intervals you specify.

The camera works very well, although focusing is difficult, particularly at 640 by 480 pixels, where there's a noticeable delay between image updates. As for the image quality, let's just say it's great for the price. We wouldn't hesitate to recommend a QuickCam Pro image for an auction site or a family or school project. For more demanding applications—well, we would hesitate.

The QuickCam Pro also works with other QuickTime-compatible software, such as Rearden Technology's SiteCam (see *Reviews*, December 1999).

Macworld's Buying Advice If you already have a video camera, a USB-based capture device such as XLR8's InterView may be a better bet. And if all you need are still images for a Web site, you might consider a low-end digital camera. But if you want one inexpensive device that lets you grab everything from decent-quality snapshots to Webcam images to time-lapse movies—and that works on either Mac or Windows—you can't go wrong with the QuickCam Pro.—JIM HEID

RATING: ●●●½ **PROS:** Simple installation; versatile; inexpensive. **CONS:** Image quality only fair; focusing can be cumbersome. **COMPANY:** Logitech (800/231-7717, www.logitech.com). **LIST PRICE:** $150.

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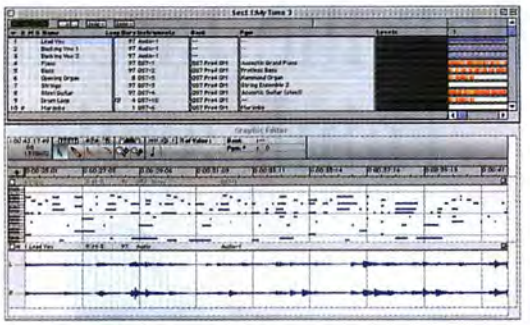
Metro 5.0

MIDI SEQUENCER NEEDS TUNE-UP

WHAT CAN YOU SAY ABOUT A company that discards the 500-page manual that graced a fairly complex MIDI application and then "upgrades" it with 60 pages of PDF-format quick-start material and inadequate online help? While you might praise Cakewalk for its efforts to save trees, you might just as easily denounce it for making its midprice MIDI sequencer, Metro 5.0, more difficult to use than is necessary.

The lack of documentation, coupled with an interface that buries common commands in dialog boxes, mars a modestly capable MIDI sequencer. On the surface, Metro's features compare well with those of its more expensive competitors: It records countless MIDI tracks and up to 64 tracks of digital audio. It supports ASIO (Steinberg's Audio Stream Input/Output)–compatible audio cards, as well as Adobe Premiere–compatible and Steinberg's VST–compatible effects plug-ins. It also offers such common features as mix automation, groove quantize, audio scrubbing, and audio cross-fades.

Of course, you shouldn't expect miracles from a sequencer that costs hundreds of dollars less than the competition. Not surprisingly, once you begin to explore Metro's features you discover they lack the depth of more-expensive sequencers. For example, Metro's effects plug-ins, such as reverb, delay, and chorus, are of questionable quality. The mixing console within the Instruments window doesn't let you assign a name to a fader or switch effects on and off. Nor can you loop or change the pitch of audio files or easily view single tracks in the Notation window.

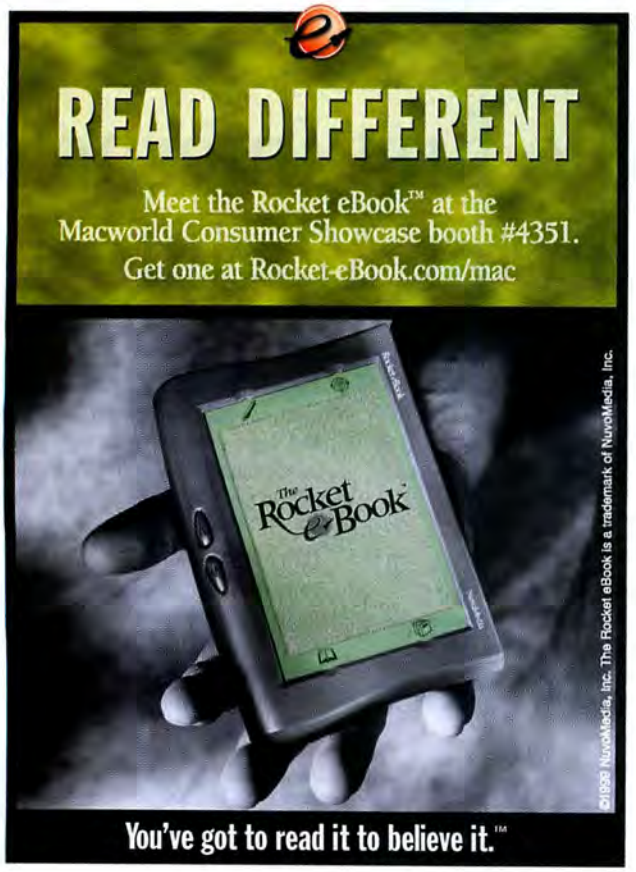


Making Tracks Metro 5.0 offers such typical sequencer features as track overview and graphic editing of MIDI data.

Even though Metro lacks some features, it can do much more than simply record MIDI and audio data. The program gives you some useful musical goodies; for example, you can record multiple takes without having to stop and start the sequence. Using Multiple Take Mode, you select an area of a sequence, determine how many takes you wish to record, and start recording. As you finish each pass, Metro returns to the beginning of the selected section and starts recording your next take in a new track. A unique Note Spray tool lets you add semirandom MIDI data to a track—notes constrained to a particular scale, for instance, or velocities that fall within a user-defined range sprayed over a drum track.

Macworld's Buying Advice Metro 5.0 is a serviceable sequencer for those on a budget, offering a competent—though occasionally shallow—set of features. Regrettably, some users may never discover these features due to the lack of proper documentation and an unintuitive interface.—CHRISTOPHER BREEN

RATING: ❚❚❚ **PROS:** ASIO and VST support; records up to 64 audio tracks. **CONS:** Sparse documentation; too many dialog boxes. **COMPANY:** Cakewalk (888/225-3925, www.cakewalk.com). **LIST PRICE:** $250.





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X-Plane 5.1

SUPERREALISTIC FLIGHT SIMULATOR

MACINTOSH FLIGHT SIMULATORS usually fall into one of two categories: military-campaign shoot-'em-ups and ultratame general-aviation trainers. Laminar Research's X-Plane 5.11 transcends those categories, delivering a general-purpose aircraft simulator capable of modeling virtually anything that flies, from a tiny, remote-controlled model airplane to a space shuttle. The program is loaded with features, and it takes advantage of Mac graphics accelerators to deliver stunningly good performance even on low-end G3 Macs.

After installation, the program runs from your hard disk, but you have to load the CD as a copy-protection key. In the 200MB of disk space the program requires, X-Plane stores a database containing topological, navigation-aid (navaid), and airport information for the entire world; detailed scenery for several large cities; and a fleet of more than 40 aircraft, including prop-driven general-aviation planes, business jets, airliners, helicopters, military craft, and experimental jobs. You can download dozens of other aircraft, as well as additional scenery, from a huge number of X-Plane–groupie Web sites. X-Plane has a large and vocal online constituency that constantly bombards the developer with feature requests. Many of these solicited improvements are delivered in frequent updates downloadable from Laminar's Web site.



Authentic Imagery X-Plane's terrain and surface textures produce realistic close-up views.

X-Plane supports resolution settings as high as 800 by 600 pixels in millions of colors. On a Mac with graphics acceleration, out-the-window graphics are gorgeous; cockpit-instrument depictions are generic but good-looking.

The program sports many bells and whistles, including real-world weather extracted from the Internet, ships and aircraft carriers that roll in realistic seas, authentic precipitation, and realistic runway markings and textures. Air-traffic-controller speech, generated by synthesis rather than a recording, gives you realistic interaction with air-traffic controllers. You can also construct your own aircraft, scenery, and airport layouts.

On a fast G3 or G4 Power Mac, X-Plane is blazingly fast. The simulator's flight dynamics, based on accurate modeling of aerodynamic surfaces, are very realistic.

Macworld's Buying Advice At $199, X-Plane 5.11 costs more than game-style simulators but considerably less than professional FAA-approved training simulators that let you log your flying time, such as Fly-Elite's Elite 5.3. Despite X-Plane's lack of FAA approval, it approaches the quality of approved simulator programs. However, X-Plane isn't for everyone: you can't engage enemy aircraft in battle, so if you relish a good dogfight, buy something else. But if you're a licensed pilot or pilot wannabe looking to experience realistic flight, schedule a ride in X-Plane.—MEL BECKMAN

RATING: ★★★★½ **PROS:** Realistic flight characteristics; excellent performance; exquisite visuals. **CONS:** Pricey compared to game-grade simulators. **COMPANY:** Laminar Research (803/738-0910, www.x-plane.com). **LIST PRICE:** $199.



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Total Annihilation Gold Edition

REAL-TIME STRATEGY GAME FINALLY MAKES IT TO THE MACINTOSH

THERE COULD BE NO BETTER example than Total Annihilation of why Apple should keep trying to bring PC games to the Mac more speedily. At the time of its initial PC release in late 1997, this real-time strategy game from Cavedog was the hottest thing going. In the two years since then, Mac gamers have had the opportunity to play three other outstanding real-time strategy games: Bungie's Myth and Myth 2, and Blizzard's StarCraft. Although Total Annihilation remains a terrific game, the innovations it introduces are not nearly as impressive now as they might have been two years ago.



Total War In Total Annihilation you fight on land, at sea, and in the air.

Total Annihilation closely approximates the model of real-time strategy games that Blizzard's WarCraft (the predecessor to StarCraft) set forth. It asks you to mine metal and energy and then use them to build structures that create more-powerful and more-varied armies and armaments. As with StarCraft and both Myths, Total Annihilation imposes a line-of-sight restriction: if an object lies behind an obstruction such as a mountain or forest, you can't see it until it's within the sight line of one of your units.

Groundbreaking when the game was first released, many of Total Annihilation's features are still impressive, although more-recent titles execute them better. Total Annihilation's attractively rendered terrains make a real difference in game play. As in the Myths, those who command the high ground have an advantage: not only do projectiles travel farther when fired from above, but shots fired from below are less effective. The game sports an additional environmental challenge—forests, which not only impede the progress of your troops but can also hide the enemy. Of course, if you find forests inconvenient, you're welcome to set them ablaze—along with the forces hiding therein.

The game includes both single-player Campaigns and multiplayer Skirmishes you can play on the Web, across a network, or against a computer opponent. Unfortunately, because the Mac and PC versions of the game use different networking protocols, Mac players can't take on PC players.

But dry those tears—you may never get to the multiplayer game, because MacSoft has included not only the original game but two expansion packs as well: The Core Contingency and Battle Tactics. With this addition, you can now play through 175 missions with more than 250 units.

Macworld's Buying Advice Although fans of Myth and StarCraft may wonder what all the fuss is about, Total Annihilation is still a terrific, if belated, title for Mac gamers. And with the included expansion packs, it's a great value as well.—CHRISTOPHER BREEN

RATING: ♦♦♦♦ **PROS:** Good graphics; lots of missions. **CONS:** No PC-to-Mac networking. **COMPANY:** MacSoft (800/229-2714, www.wizworks.com/macsoft/). **LIST PRICE:** $50.

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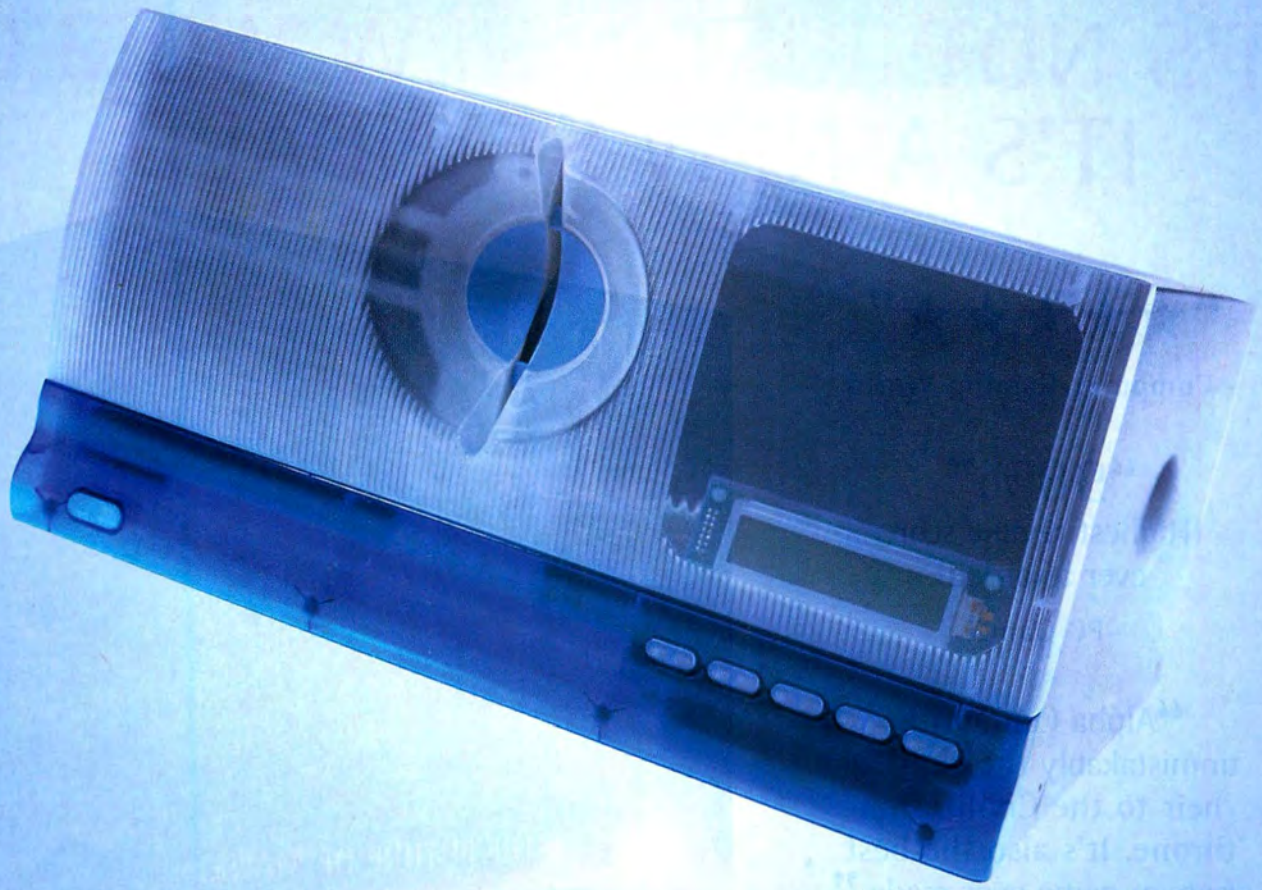
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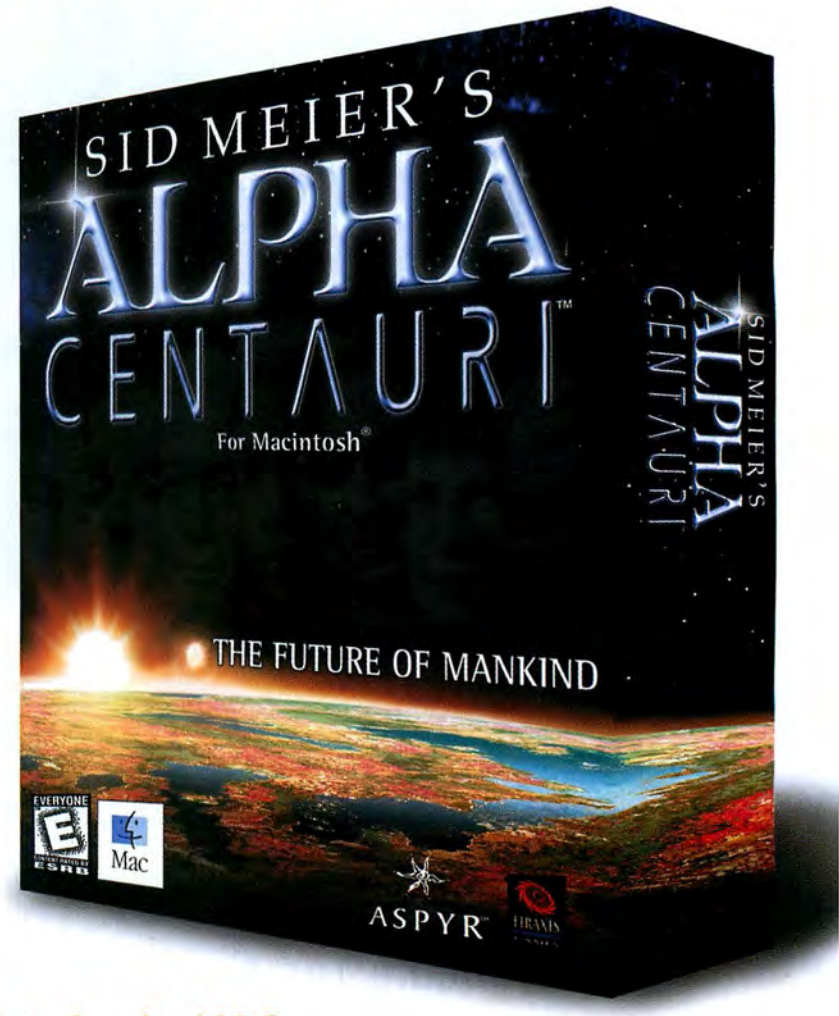
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It's a Family Affair

PERFECT GAMES FOR WINTER NIGHTS WITH YOUR KITH AND KIN

by Christopher Breen

Anyone looking at my family from the outside would remark that our clan appears to be remarkably supportive. My sisters invariably remember my birthday with a card and a call, and my nieces refrain from melting into a soporific trance during my long-winded narratives. Yet lately I've begun to wonder if my family's support extends to reading the words I've penned upon these pages. Well, the confirmation is in the custard, and substance was lent to my suspicions when I trekked home during the holidays for a family gathering and found Mom seated at her iMac.

"I'll be off in a minute, dear," she called over her shoulder. "I loved the last game column, by the way. That dog thing was really cute!"

Now, I've never written a "dog thing" in my life, but I was willing to let this pass. Far more disturbing was that when I peered over her left shoulder, I saw that my mother was wholly swept up in a frantic bout of—of all things—Koji the Frog!

Don't get me wrong; I'm not slamming Marco Carra's delightful arcade game, but after devoting hundreds of thousands of words to Mac gaming (and sending the family several care packages of games I no longer had a use for), I was a bit put out that she hadn't bothered to heed my advice and play something more up-to-date. Despite my distress, however, I remained calm.

"WHAT THE HELL ARE YOU DOING?" I shrieked. "I SEND YOU A BOX FULL OF GAMES THAT ANY 13-YEAR-OLD WOULD SELL HIS PIMPLED SOUL FOR, AND YOU'RE PLAYING KOJI THE DAMNED FROG!?"

Sometime later, as I rinsed the last of the soap from my mouth, my mother carefully explained, "Dear, everyone in the family appreciates your suggestions, and of course we're delighted that you care enough to send those games. But most of them aren't our style."

And of course she's right. Unlike the games we used to play around the kitchen table, many of today's computer games can be enjoyed only by those with a fleet trigger finger and a stomach for cartoon violence. If I expect my family to join the legion of Mac gamers, I must recommend a more appropriate set of products. Allow me now to do just that.



RICCARDO STAMPATORI

It's in the Cards

I don't mean to imply that my relations are likely to play only those games invented before electric power came into vogue. I'm simply suggesting that my kin, like many of us, are likely to make a beeline for the familiar. Whether it's the brand of beer you drink, the kind of shoes you wear, or the Sunday breakfast you prefer, there's a certain comfort in trooping down a well-worn path.

Nothing could be more comfortable than card games, and that's where I intend to start with Mom. It would be unkind of me to brand my mother a card-sharp in print, but I recall losing my allowance to her in more gin rummy matches, even at a tenth of a penny per point, than I care to recount. Those losses still rankle, and I'd like the opportunity to get some of my own back. And with Sierra's (www.sierra.com) Hoyle Card Games, now I can. This $30 collection of card games includes not only gin rummy but also other classics such as poker, bridge, pinochle, hearts, and spades. There's even a solitaire component that includes 30 variations, such as eight off; Canfield; golf; and, of course, the same Klondike that appears in every shareware and commercial solitaire collection in the universe. Although you can play all these games against computer opponents—the skill of which you can determine—the real fun begins when you hit the Net and challenge friends and relatives.

The only problem I have with Hoyle's network play is that it's so *polite*. By this I mean that with Hoyle I can't taunt Mom in ways that I know, from experience, will distract her from the game at hand. I may therefore try to sneak a copy of Freeverse Software's (www.freeverse.com) $30 Spades onto her iMac. I'm hopeful that my use of the

continues







Passive, Aggressive, and Deadly These games offer something for your mother, your father, and your bloodthirsty uncle: Hoyle Card Games (above), Links LS (above right), and Rocky Mountain Trophy Hunter (right).

game's chat component, which allows me to make cruel jibes that appear in word bubbles next to my on-screen character's face, will provoke her into playing the wrong card.

Totally Board

Before I learned to value the health-giving properties of sleeping until noon on weekends, my sisters and I would get up at the crack of dawn and head straight for our closet full of board games. After many years—and a few garage sales—that closet is now bare, but thanks to Sierra and its $30 Hoyle Board Games, my sibs and I can rekindle our board-based rivalries of old. This collection includes backgammon, checkers, chess, pachisi (India's national game, known to many as Parcheesi), Yacht (a.k.a. Yahtzee), Battling Ships (yeah, you know), and Zen Bones (Sierra's take on the classic tile game Shanghai). It also contains a version of dominoes but, regrettably, not one that allows you to play the traditional gambling form of the game, called fives—and therefore not one that allows you to wager a few bucks on the side, should you be so inclined. As with Hoyle Card Games, you can play these games over the Internet.

The Great Outdoors

Gathering the menfolk to the bosom of Mac gaming may be more of a challenge. Males in my family tend to favor fresh air and eschew most of the electronic miracles introduced in the last couple of decades. My mother's husband, Lew, in particular, though a great guy, can't be bothered with computers. At least he couldn't until he happened to walk past while I was hacking away at Kapalua's 17th hole in Access Software's (www.accesssoftware.com) $45 Links LS on my PowerBook.

"You mean you can play golf with that thing?" he asked in his quiet way.

"Sure," I replied. "Just position your player, decide where you want the ball to go, and swing away—being careful how you time your swing, of course."

"And you could do that with your mom's iMac?"

"Absolutely. Just pay $45 for the program, and when it's too cold out to hit the course, you can visit these virtual links in the comfort of your own home."

With no more than a "mind if I try?" Lew sat down, and I had another convert.

Convincing my Uncle Karl may be a bit more difficult. Karl is a woodsman who particularly enjoys fishing and hunting. I prefer my wildlife in an unharmed state, but as a member of the carnivorous class, I would be a hypocrite to suggest that the direct method Karl employs to secure the Sunday roast is somehow unseemly. But perhaps I could help save a few of our four-legged chums by exposing Karl to MacSoft's (www.wizworks.com/macsoft/) Deer Hunter and Rocky Mountain Trophy Hunter ($20 each). Those who participate in blood sports tell me that these two games are fairly authentic re-creations of the real thing—meaning, I suppose, that while playing these games you tend to spend a hefty chunk of time sitting on your fanny waiting for something to happen. While this isn't my idea of a rollicking good time, if it makes Karl happy—and introduces one more relative to Mac gaming—I'm all for it.

Word to Your Mother

Although I don't expect my family to read these words, perhaps a reader acquainted with them would pass along this message: "Folks, thanks for introducing me to gaming. As it turns out, those long, rainy afternoons spent playing Uncle Wiggly and Candy Land paid off. If you hadn't instilled in me your competitive spirit and sense of fun, this column would undoubtedly bear another's name.

"Now it's time for me to return the favor. The next time a box full of games arrives, they'll be the right games for you. Put down Koji the Frog, install a couple of them, and log onto the Net. As much as I might care for you, I haven't forgotten the many times you sank my battleship, skunked me in gin rummy, and cackled in cruel delight as I landed on an overbuilt Boardwalk.

"Let's see if you've still got what it takes. I'll be waiting." **m**

Contributing Editor CHRISTOPHER BREEN coauthored *My iMac* (IDG Books Worldwide, 1999).

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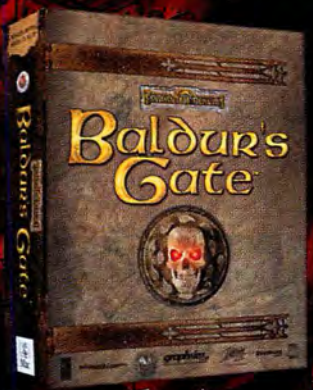
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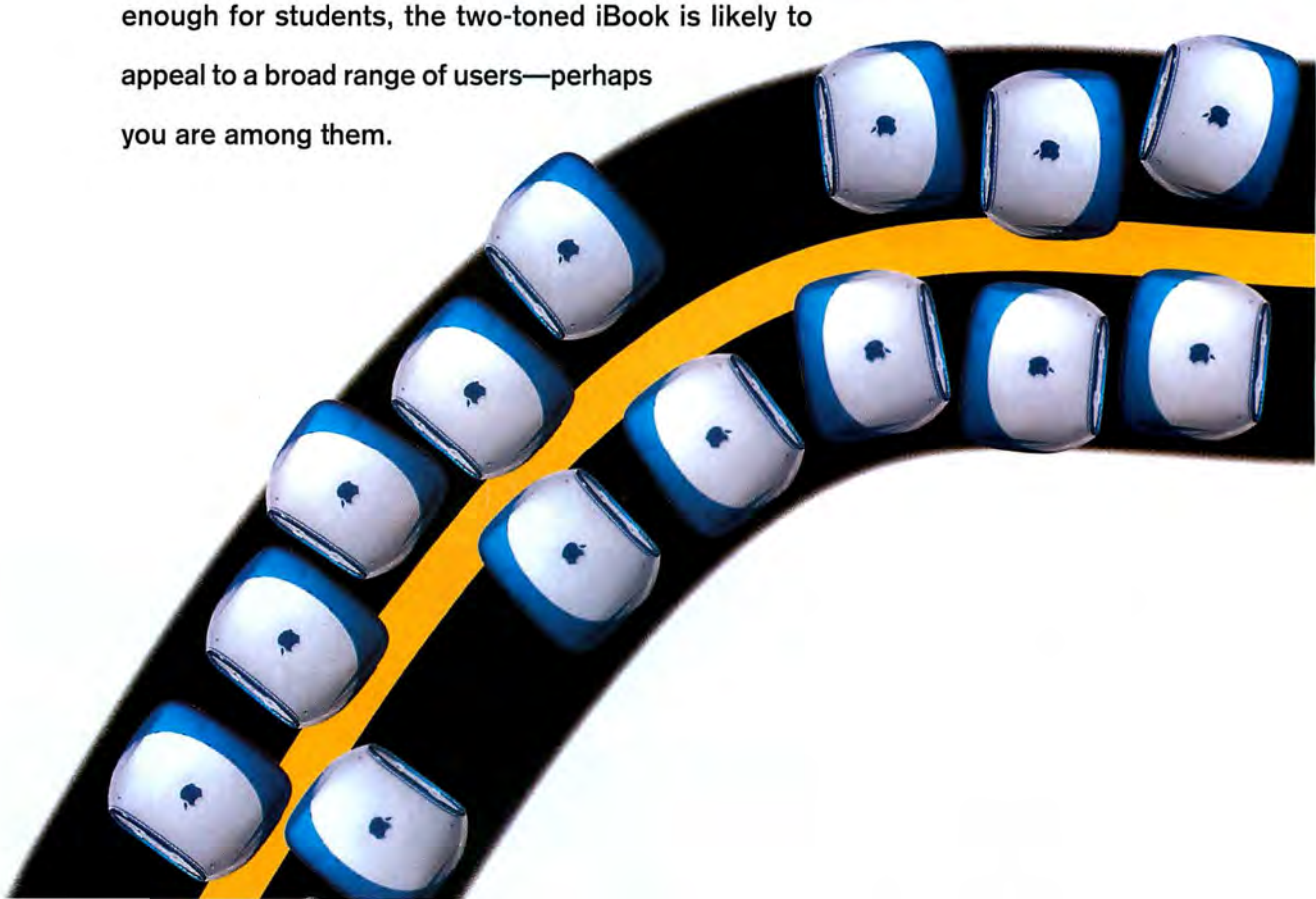
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MAKE THE MOST OF YOUR iBOOK WITH THESE EXPERT TIPS

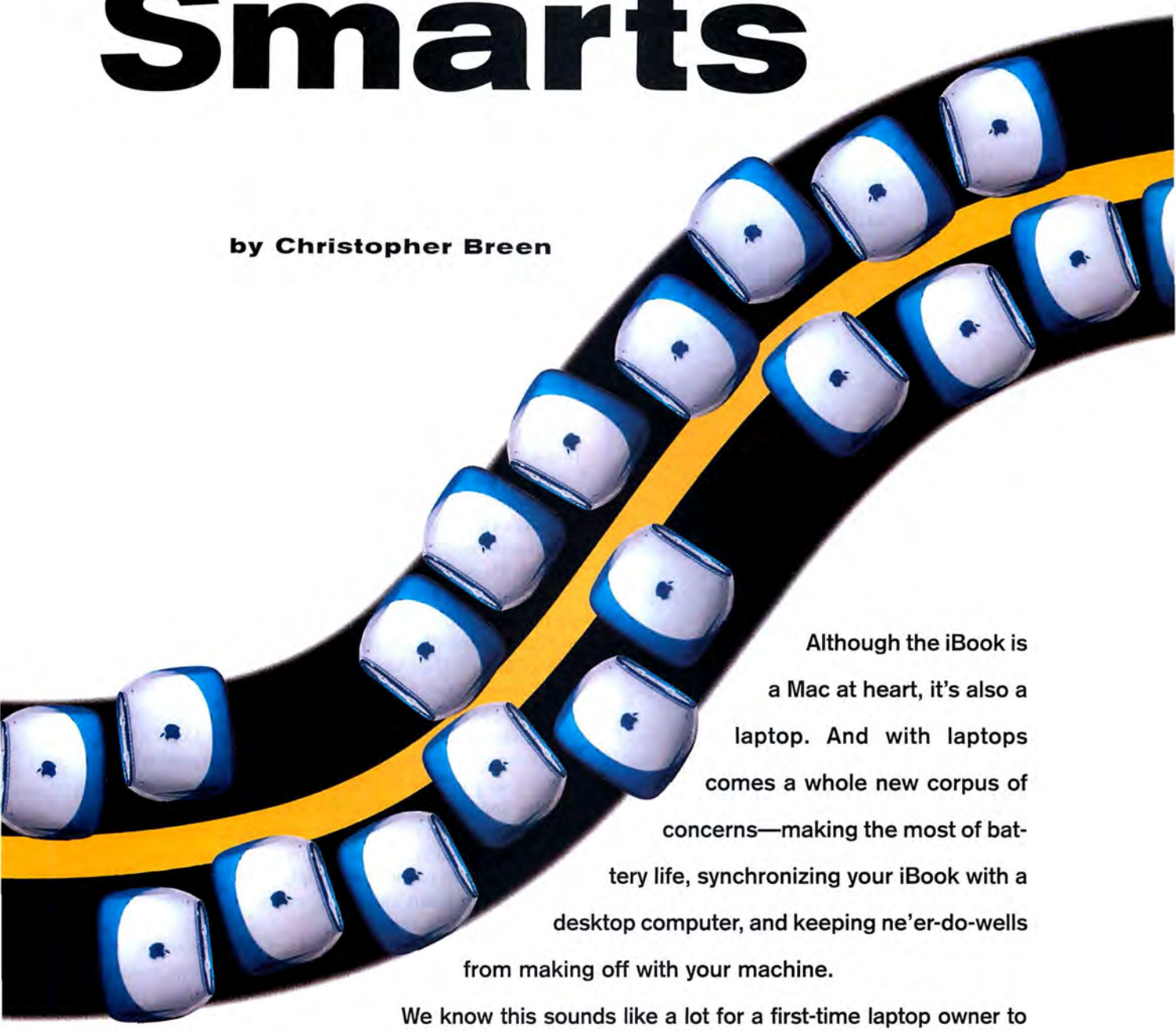
Not so long ago, if you wanted to be taken seriously as a commutin', computin', highfalutin warrior of the road, you adorned your person with a passel of drab devices—a cellular phone, a pager, and of course the requisite laptop computer—all in gray and black tones. How dull. How common.

Thanks to Apple's introduction of the iBook, common is out and colorful is in. Powerful enough for professionals yet affordable enough for students, the two-toned iBook is likely to appeal to a broad range of users—perhaps you are among them.



Smarts

by Christopher Breen



Although the iBook is a Mac at heart, it's also a laptop. And with laptops comes a whole new corpus of concerns—making the most of battery life, synchronizing your iBook with a desktop computer, and keeping ne'er-do-wells from making off with your machine.

We know this sounds like a lot for a first-time laptop owner to absorb, but we're here to help. Before you next bundle your two-toned buddy into a backpack, briefcase, or book bag, read through the following tips, tricks, and techniques. With this information, you'll transform your iBook from a cute consumer curio to a productive portable as capable as any other computer on the road.

PHOTOGRAPHY BY MARK JOHANN

Coming to Terms

WHEN YOU PURCHASE AN iBOOK, you join the ranks of the Laptop Legionnaires—a group of users with specific computing concerns and a language all its own. If you expect your iBook to walk the walk, you should know how to talk the talk. This glossary of terms will help you make sense of portable prose.

File Synchronization	The process whereby changes that have been made to a file or folder are made to its duplicate on another computer. For example, if you update a database or an e-mail file on your iBook while on the road, you can use file synchronization to update the copies of these files on your desktop Mac at home.
Location Manager	An application that allows you to create groups of software settings for your Macintosh. Using Location Manager, you can change such settings as AppleTalk and TCP/IP configurations, the default printer, the sound level, and the time zone.
Power Manager	An integrated circuit that is responsible for such tasks as controlling backlighting, waking your iBook from sleep, spinning down the hard disk, controlling the Trackpad, handling some aspects of battery charging, and making sure the iBook doesn't go to sleep while you're connected to the Internet.
Processor Cycling	A reduced-power mode that causes your processor to consume less power when idle.
Remote Access	The control panel where you enter and save the user name, password, and phone number for your Internet service provider (ISP). Under Mac OS 9, you can configure Remote Access so that you can run another Macintosh from a remote location.
Reset Button	A small, indented button that sits just above the iBook's power button, near the hinge. Pressing this button with the pointed end of a paper clip makes the iBook restart.
Sleep	A state in which a computer's hard disk stops spinning, the screen shuts off, and just enough power is fed to the computer to maintain the contents of the computer's memory.
Virtual Memory	A scheme that allows your Mac to use free space on its hard disk for short-term memory, or RAM. You can turn on virtual memory by going to the Memory control panel (Apple menu: Control Panels: Memory), but beware—because your Mac accesses the hard disk more slowly than it does RAM, using virtual memory will slow down your Mac.

Safe, Not Sorry

It's unfortunate that the minute you walk out the door with your new iBook, you must start thinking of ways to protect it from theft. Let's face it—the iBook, with its rich blue or orange skin, is attractive not only to you but also to those who'd like to make your iBook their own. After all, it's a *portable* and is therefore easy to snatch. Because we want you to own your iBook long enough to gain some benefit from the rest of this article, consider the following security measures.

Lock It Up Apple's PowerBooks have long carried a security slot for attaching special cables that tie the machine to an anchored object. The iBook lacks such a slot but does come with a foldout handle that's devilishly difficult to remove. Loop a security cable or chain through this handle and attach a secure lock to keep your iBook from walking away. Because you don't need a laptop lock, a steel chain and a padlock will do the trick.

What's the Password? If you plan to use your iBook to take notes in class or update spreadsheets when your flight is delayed, you'll want to keep your data from the prying eyes of others.

With its PowerBook series, Apple provides the Password Security control panel for protecting a PowerBook's hard disk, but regrettably this control panel isn't compatible with iBooks. Even if you choose a custom installation of Mac OS 8.6 and attempt to install the Password Security control panel, your iBook will chuck it at restart.

Apple has provided no solution for password-protecting your iBook with Mac OS 8.6 installed, so you have to use a utility such as Power On Software's $50 On Guard (800/344-9160, www.poweronsw.com). If you use Mac OS 9, however, you can use the Multiple Users control panel to help fend off prying eyes.

To configure Multiple Users for password protection, simply open the Multiple Users control panel (Apple menu: Control Panels: Multiple Users), click on the On button that appears next to Multiple User Accounts, and close the control panel. The next time you start up your iBook, you'll be presented with a "Welcome to Mac OS" window that contains your name.

To start using your iBook, click on the Log In button, type your password—the same password you used when you first set up your iBook (the one in the File Sharing control panel)—and you're on your way. Although some know-it-alls may figure out a way around this protection, most casual users will be dissuaded from investigating further. If you want to disable password protection, simply open the Multiple Users control panel again and click on the Off button, next to Multiple User Accounts.

Note, however, that if you plan to be away from your iBook for a while and are about to put the iBook to sleep, you should log out (choose Log Out from the Special menu) if you want your iBook protected during your absence. Unless you log out, your iBook will pop back to life without asking for a password.

Wrap It Discreetly Using the iBook's handle is a convenient way to transport your laptop, but carrying a naked iBook around simply advertises that you have a computer worth stealing. A computer bag, although a little less obvious, is also conspicuous. To disguise your iBook's identity, carry it in a padded backpack designed to carry a laptop. One of our favorite backpacks is Kensington's SaddleBag (see the sidebar "Road Tools" for details on this and other cool products).

Personalize Your Desktop You can also brand your iBook's desktop so that it can be easily identified later. To do so, create



Inside the iBook before removal of the metal shield.

a PICT file that contains a message such as "This iBook belongs to *insert your name here*, so hands off!" Open the Appearance control panel, click on the Desktop tab, drag and drop this file onto the picture frame at the left side of the window, and click on the Set Desktop button. The message you created is now plastered across your iBook's desktop.

To keep unsavory souls from removing that message, rename the Appearance control panel something sneaky—*Read Me*, for example—and replace its icon with a generic text-document icon. To create this icon, find a text document on your iBook (any Read Me file will do). Click on the icon, press ⌘-I to bring up the Get Info window, click on the document's icon in the upper-left corner of the resulting window, and press ⌘-C to copy the icon. Now click on the Appearance control-panel file, press ⌘-I, click on the icon, and press ⌘-V to replace the Appearance icon with the text icon. Now drag your renamed Appearance control panel to somewhere safe (and somewhere you're likely to remember). Users who aren't terribly Mac-savvy will have a heck of a time removing that message from your iBook, but you can change it, of course. Simply double-click on the disguised Appearance control panel and select a new desktop pattern.

Pump Up Power

For some people, running out of battery life is an unlikely prospect. But the truth is that it's much more common than you might suspect. Imagine this: you're heading home on a cross-country flight for spring break, but you need to finish a term paper and e-mail it to your professor the second you land in San Francisco. As you pass over Fort Dodge, Iowa, your iBook runs out of juice because you've been pounding the latest Korn CD through your cranium since the beginning of the flight.

Since a simple action such as this can drain your battery, power management is important for all portable users—not just for power users. If you want your iBook to deliver the goods when you most need them, squeezing every second out of your iBook's battery should be your goal.

Avoid Battery-Sucking Operations The iBook's LCD screen and that Korn-filled CD-ROM drive pull a lot of power from the battery. To maximize battery life, turn screen brightness down to the lowest setting you can tolerate and avoid or cut back on CD-ROM use. Remove CDs from the drive if you don't need them. Also, switch off AppleTalk, either from the Control Strip or by opening the Chooser and clicking on the Inactive button. Finally, remove external devices you're not using—that button-studded game pad of death, for example. If you're a music enthusiast, turn your favorite CD audio tracks into MP3 files and play them from the hard disk (see the feature "MP3 to Go," elsewhere in this issue, to find out how to do this). If you have RAM to spare—and you won't unless you add at least 64MB of RAM to the paltry 32MB that come with the iBook (see the sidebar "Inside the iBook")—create a RAM disk for storing applications you tend to use often, such as your word-processing program. Steps for creating a RAM disk can be found in Mac Help in the Special menu. Additional RAM may also allow you to avoid using virtual memory—a scheme that forces the iBook to access the hard disk more often and, consequently, drains your battery more quickly. You'll find controls for turning off virtual memory in the Memory control panel.

Use Energy Saver Be miserly with your battery life by using the power-saving settings in the Energy Saver control panel. Put the iBook to sleep after a minute of inactivity when on battery power, for example. And select the Allow Processor Cycling option in the Advanced Settings window.

Sleep Tight The iBook won't automatically go to sleep when you have Speakable Items enabled in the Speech control panel. Speakable Items allows your iBook to recognize certain spoken commands. It's unlikely that you'll have Speakable Items enabled—particularly since the iBook has no microphone input—but if someone else has been using your iBook, it's possible that this feature was switched on. If you notice that your iBook won't automatically sleep, check the Speech control panel. If you boot your iBook from a CD-ROM and then put the iBook to sleep—for example, if you started your iBook from the Soft-

Road Tools



EVEN WITH ALL THE PERKS IT PROVIDES, AN iBook—like any other laptop—can benefit from a few well-chosen add-ons. When you take your life on the road, consider bringing these items with you.

iMate For those Mac users who are still big fans of old ADB peripherals—mouse, keyboard, and joystick—this $39 USB-to-ADB adapter may be a godsend. (Griffin Technology; 615/255-0990, www.griffintechnology.com.)

USB 6GB Hard Drive By today's standards, the iBook's 3.2GB hard drive is considered cramped. To provide more storage, try this $430, colorful drive. (VST; 978/635-8200, www.vsttech.com.)

Port Travel Connection Packs If you're taking your iBook overseas, you'll need telephone and power adapters. Port offers three collections (Europe pack, $199; Americas pack, $99; Asia and Middle East pack, $99). (Port; 800/242-3133, www.port.com.)

SuperDisk If you'd like to use floppy disks as well as a roomier storage medium, the $150 SuperDisk is a good compromise—allowing you to use floppies as well as Imation's own 120MB disks. (Imation; 888/466-3456, www.imation.com.)

Zip 250 USB Drive Just about every computer today seems to have a Zip drive. Thanks to this slim drive's USB interface, for $180 your iBook can have one too. (Iomega; 801/332-1000, www.iomega.com.)

Klearscreen Wet Dry Singles Pack Even the cleanest of hands are likely to smudge an iBook's screen. These disposable towelettes—$6 for a pack—can help you keep it spotless. (Klearscreen; 800/505-5327, www.klearscreen.com.)

iCoolPad Hands big and small may find that the iBook's keyboard is a wee bit flat. To add some elevation—and provide a swiveling base that really grips an airplane tray table—try the $23 iCoolPad. (Road Tools; 603/926-9000, www.roadtools.com.)

MouseWorks Although the iBook's Trackpad is reasonably responsive, you may still miss using a mouse. Try out this $40 USB four-buttons-and-a-wheel input device. (Kensington; 800/235-6708, www.kensington.com.)

SaddleBag This good-looking and durable backpack will protect your iBook and make it easier to carry. (Kensington; 800/235-6708, www.kensington.com.)

ware Restore disc in order to reinstall a piece of software—it won't wake up properly. The only way to recover is to reboot your iBook, by pressing ⌘-control-power (or the reset button).

Selecting Preserve Memory Content On Sleep in the Energy Saver control panel should, in theory, help ensure that your work will still be there when your iBook next awakens. However, you might not be able to get your iBook to stop snoring. If this happens, restart the iBook and hold down the escape key until you see the Happy Mac icon. This procedure tells the iBook to bypass any corrupted file that might be keeping your iBook from booting correctly.

Swap Carefully If your battery is running low and you have a spare, just swap it, right? Not exactly. Beware of haphazard battery swapping, because you can lose your work if your iBook isn't plugged into a powered socket. Pulling a battery switch without having the iBook plugged in wipes out the contents of the computer's short-term memory—the information stored in its RAM chips. To preserve the contents of RAM while the iBook sleeps, open the Energy Saver control panel, click on the Advanced Settings button, and check the box next to Preserve Memory Contents On Sleep under Sleep Options.

Reset the Power Manager With time, it's possible for the Power Manager to become corrupt, causing your iBook to act strange—refusing to recognize the AC adapter, failing to wake from sleep, or being unable to charge the battery. You're probably wondering how this happens, but it's not a bug—it's just one of the quirks of working with an Apple portable. To reset the Power Manager, shut down the iBook, press the reset button (located above the power button near the hinge) with the end of a paper clip, wait five seconds, and press the power button to restart.

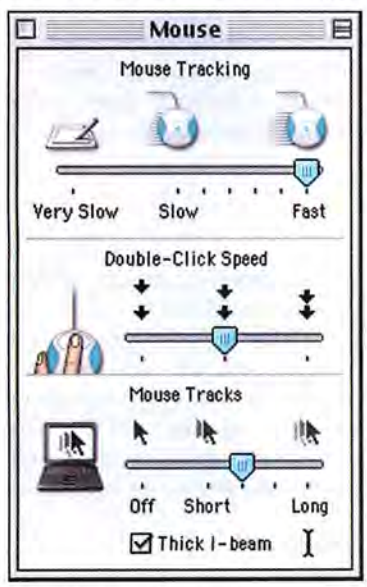
Search for Unexpected Power Sources All these thrifty habits won't protect you from eventually running out of juice. When the "battery low" warning appears, you'll need to think fast.

If you're using your iBook at the airport, find a seat near a power outlet and plug in. Scope out the location of any power outlets in classrooms, lecture halls, and meeting rooms (and carry an extension cord with you). On a long flight, try giving your iBook a little extra charge by using the outlet in the plane's lavatory. The battery takes two hours to fully charge, so unless the plane's completely empty, you shouldn't attempt to charge the iBook for more than a couple minutes at a time.

Getting Around

Have you ever wondered why the word *mouse* has become a verb—as in "I was mousing around on my Mac the other day"—and the word *touchpad* hasn't? It's simple: your hand was meant to mouse, it was not meant to touchpad. Regardless of how long most people use their iBook's Trackpad, it never feels as natural as a mouse. These tips may make your "Trackpadding" feel a little more natural.

Mouse Tracks Sometimes it's difficult to locate the on-screen cursor, particularly when you're using the iBook in direct sunlight. To find it more readily, open the Mouse control panel (Apple menu: Control Panels) and switch on Mouse Tracks (see the screen shot "Making Tracks"). Doing so causes the cursor to leave temporary trails. Select the Thick I-beam option in this same control panel to create a more visible I-beam cursor.

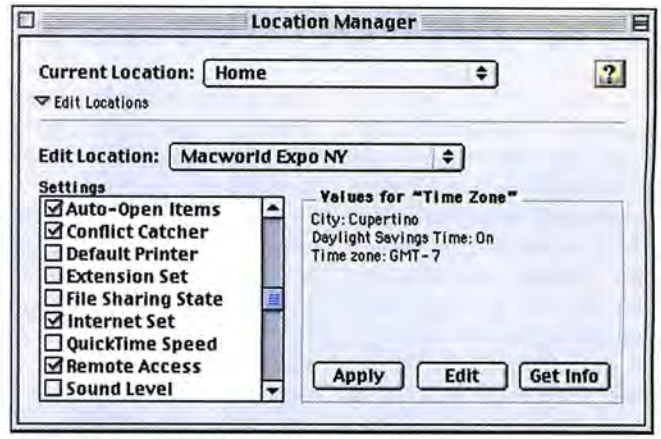


Making Tracks Cursor hard to see? Turn on Mouse Tracks in the Mouse control panel.

Trackpad Tricks If you've got big fingers—or, for that matter, small ones that don't glide across the Trackpad very well—and are having trouble moving the cursor in small increments, open the Trackpad control panel and select a slower tracking speed. At a slower tracking speed, your finger movements don't need to be as exact, so you can more easily zero in on your target.

Some people find it cumbersome to use the iBook's bottom bar to double-click. To avoid using the bottom bar, turn on the Use Trackpad For Clicking option. Now just tap on the Trackpad to click.

If you don't care for the iBook's Trackpad or keyboard, attach a USB mouse and keyboard and navigate your iBook just as deskbound Macintosh users do. Likewise, attach a USB joystick or game pad for better control over games. (Check out "Holiday Gifts for Gamers," *The Game Room*, December 1999, for stellar gaming options.)



Changing Places With Apple's Location Manager, you can swap multiple configurations with a single click.

Rules of the Road

Chances are, you bought an iBook because you planned to take it on the road with you. When traveling or working from remote locations, it's important to remember these helpful tips:

Quick and Dirty Hard Copy What if you need to print a file but don't have an accessible printer? If you're working from a hotel room, there's an easy solution: fax the document to the hotel's fax machine. Students may be able to use this fax trick with sympathetic librarians and professors.

Slide Show Photography students laden with slides may want to show off their work to fellow students and professors. With an iBook, they easily can. Just open the iBook so the top lies flat, select a desktop pattern that's completely white, turn up the brightness all the way, and place the slides on the screen. Instant light table.

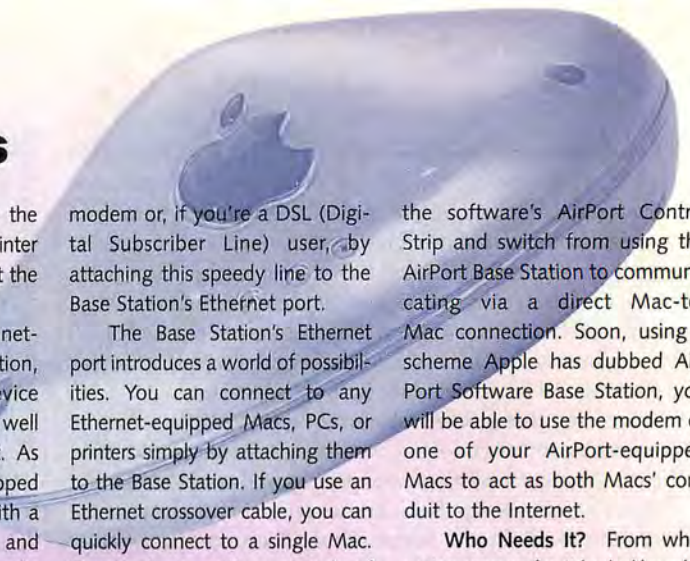
Staying in Sync In all likelihood, you have a Mac on a desk somewhere in addition to your iBook. A good way to stay up-to-date on both Macs is to synchronize the files they contain. Here's how: Create a folder—called Road Work, for example—and place it on your iBook's desktop. Create a folder with the same name on the computer you use at home. When you travel, place any documents you've worked on in this folder. When you return home, use Apple's File Synchronization control panel to synchronize the two folders.

E-mail on the Server When traveling, configure your e-mail program—most likely Microsoft Outlook Express, the program that came with your iBook—to keep copies of your messages on the server, the computer where your Internet service provider (ISP) stores your e-mail. That way, when you return home, you needn't copy your e-mail database to your desktop machine. Simply log into your e-mail account with your desktop computer and download all your messages again.

Shifting Locations Hey, you're going mobile with your iBook, and when you bounce from place to place, it's nice to have your portable pal preconfigured when you reach your next destination.

Apple's Location Manager lets you create different groups of settings to use at different locations (see the screen shot "Changing Places"). Create unique Internet and time settings for use at your East Coast college, your West Coast home, and your south-Texas

The AirPort Arrives



THE iBOOK WASN'T THE ONLY big news at last summer's Macworld Expo. Steve Jobs also introduced AirPort wireless networking, a technology he promised would free iBook users from the tether of their telephone cords and let them surf the Web and send e-mail without ever having to plug in.

It took a while, but at press time, Apple finally delivered the goods. You can now buy a $99 AirPort card for your iBook and a $299 Base Station and surf without wires to your heart's content.

AirPort technology doesn't begin and end with the iBook, however. This method of connecting computers without cables has also found its way into two other members of Apple's computing family—the newest iMacs and the 400MHz and 450MHz Power Macintosh G4s. It's sure to be included in the next generation of PowerBooks as well. Considering that AirPort technology is likely to be a part of everyone's Macintosh experience in the near future, perhaps it's time to learn what makes it tick.

What Is AirPort? AirPort is a slick technology that provides you with all the convenience of a wired network—transferring data from Mac to Mac, connecting to the Internet, and printing to a printer in another room—but without the muss and fuss of cables.

The center of an AirPort network is the AirPort Base Station, a flying-saucer–shaped device that carries a 56K modem as well as a 10BaseT Ethernet port. As many as ten AirPort-equipped devices can communicate with a single AirPort Base Station, and you can create larger networks by adding more Base Stations.

Apple claims that AirPort devices can transfer data at up to 11 Mbits per second—close to the speed of 10BaseT Ethernet—over a distance of up to 150 feet. Because AirPort uses radio waves, which can travel through walls, AirPort devices needn't be within each other's line of sight. That means you can tap away on your iBook in the living room and print your work on the printer in the den without ever leaving the comfort of your sofa.

How Does It Work? The AirPort technology's flexibility gives you a lot of options. For instance, you can wirelessly access the Web from your iBook by either connecting a phone line to the Base Station's internal modem or, if you're a DSL (Digital Subscriber Line) user, by attaching this speedy line to the Base Station's Ethernet port.

The Base Station's Ethernet port introduces a world of possibilities. You can connect to any Ethernet-equipped Macs, PCs, or printers simply by attaching them to the Base Station. If you use an Ethernet crossover cable, you can quickly connect to a single Mac. To attach an entire network of computers, use an Ethernet hub and standard Ethernet cables.

Don't feel left out if you're a PowerBook user. If you have a PowerBook 190, 5300, 1400, 2400, 3400, or G3 Series and you're using Mac OS 7.5.5 or later (or even if you have a Windows PC with a PCMCIA slot), you can use the $300 SkyLine Wireless PC Card, from Farallon (510/346-8001, www.farallon.com), to connect to an AirPort network. Although this card provides data-transfer rates of only 2 Mbits per second, it does offer an extended operating range—up to 300 feet indoors.

To wirelessly connect two AirPort-bearing Macs, you don't need an AirPort Base Station at all. With these Macs, you can use the software's AirPort Control Strip and switch from using the AirPort Base Station to communicating via a direct Mac-to-Mac connection. Soon, using a scheme Apple has dubbed AirPort Software Base Station, you will be able to use the modem of one of your AirPort-equipped Macs to act as both Macs' conduit to the Internet.

Who Needs It? From what we've seen so far, it looks like educators, students, and gamers—and the people who support them—will quickly grasp the value of AirPort technology.

With AirPort hardware in place, students can waltz into a classroom with their iBooks, select the AirPort Base Station from the AirPort Control Strip, enter a password, and get started—no more labs full of deskbound Macs that must be reconfigured for each class. Gamers using AirPort technology will be up and blasting within minutes—without the hassles of stringing yards of cable to a central Ethernet hub and mucking about with arcane AppleTalk and TCP/IP settings.

To find out more about the AirPort card and Base Station, see *Reviews* elsewhere in this issue.

spring break. Or if you use America Online and another ISP, for example, you can create a unique group of settings for each. You can easily switch from one group of settings to another, using the Location Manager module in the Control Strip.

If you have a single ISP and simply need to change dial-up phone numbers for different locations, don't bother messing around with the Location Manager. Instead, open Remote Access—you'll find it under Control Panels in the Apple menu—select Configurations (⌘-K) from the File menu, click on your ISP's configuration, and then click on the Duplicate button to create a new configuration. Name this new configuration something memorable such as *School*, click on the Make Active button, enter a new phone number in the Number field, close the Remote Access window, and save when prompted to. Now when you want to change configurations, just select the configuration you desire from the Remote Access control strip.

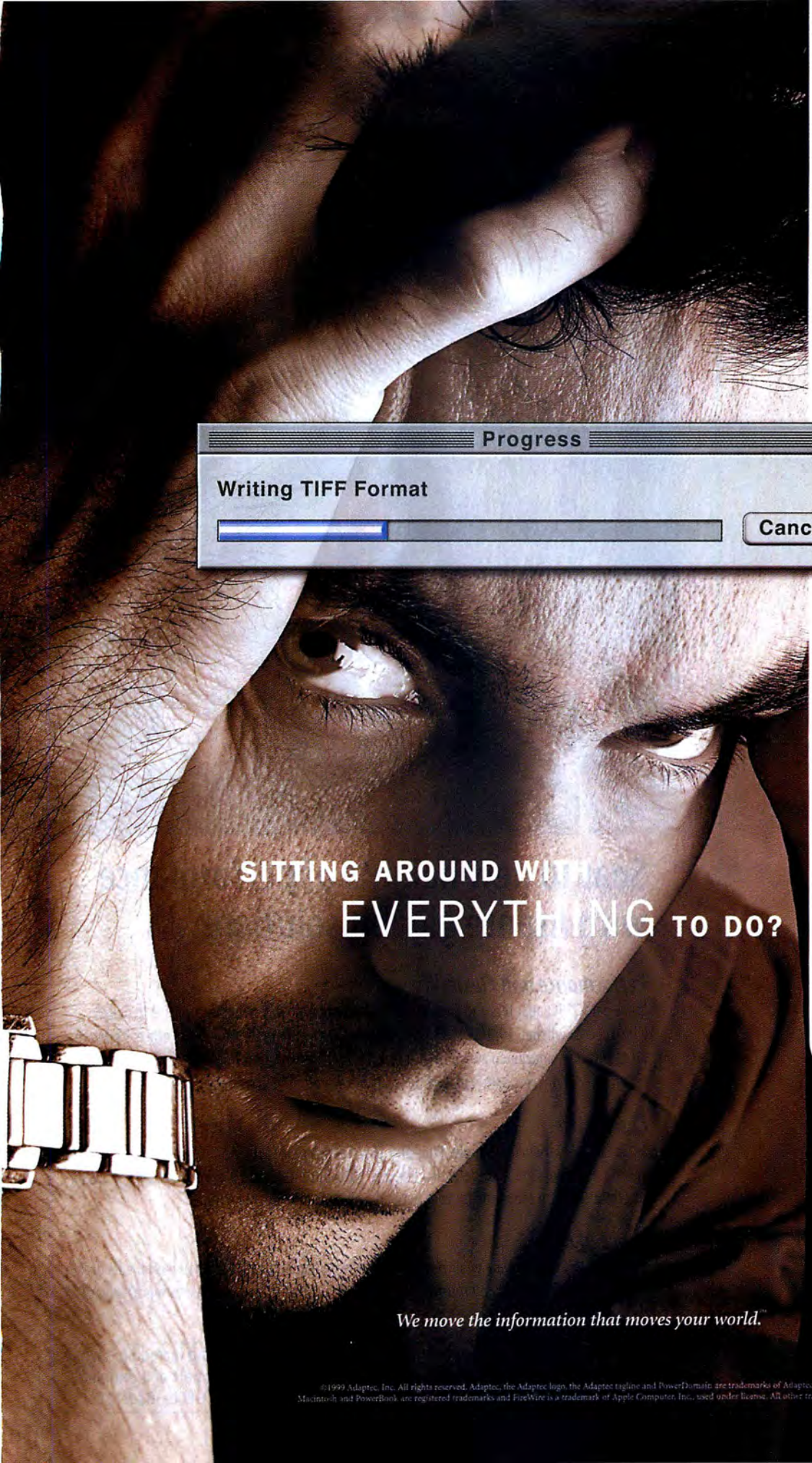
Remote Control While on spring break, you realize that your copy of "101 Jokes about Buicks and Beer" is tucked away on the hard disk of the frat's Mac. You know that joke number 52 is going to be a great hit by the pool. If only you could retrieve it! Relax—with OS 9, you can.

Unlike previous versions of the Mac OS, Mac OS 9 incorporates both the send and receive components of Apple's Remote Access. This means that you can use your iBook to call your desktop Mac, and then you can mount its hard disk on your iBook's desktop—just as if it were attached to a local network—and easily copy files between the two computers.

The Last Word

With these tips, you've taken your first steps toward becoming a road warrior. Before long, you too will begin thinking like a laptop user—seeking ever greater security measures, trying to match Apple's fabled claim of six-hour iBook battery life, and making your iBook a full member of your computer family. Now close the lid and wind up that power cord. It's time to hit the road. **m**

Contributing Editor CHRISTOPHER BREEN is a coauthor of *My iMac* (IDG Books Worldwide, 1999).



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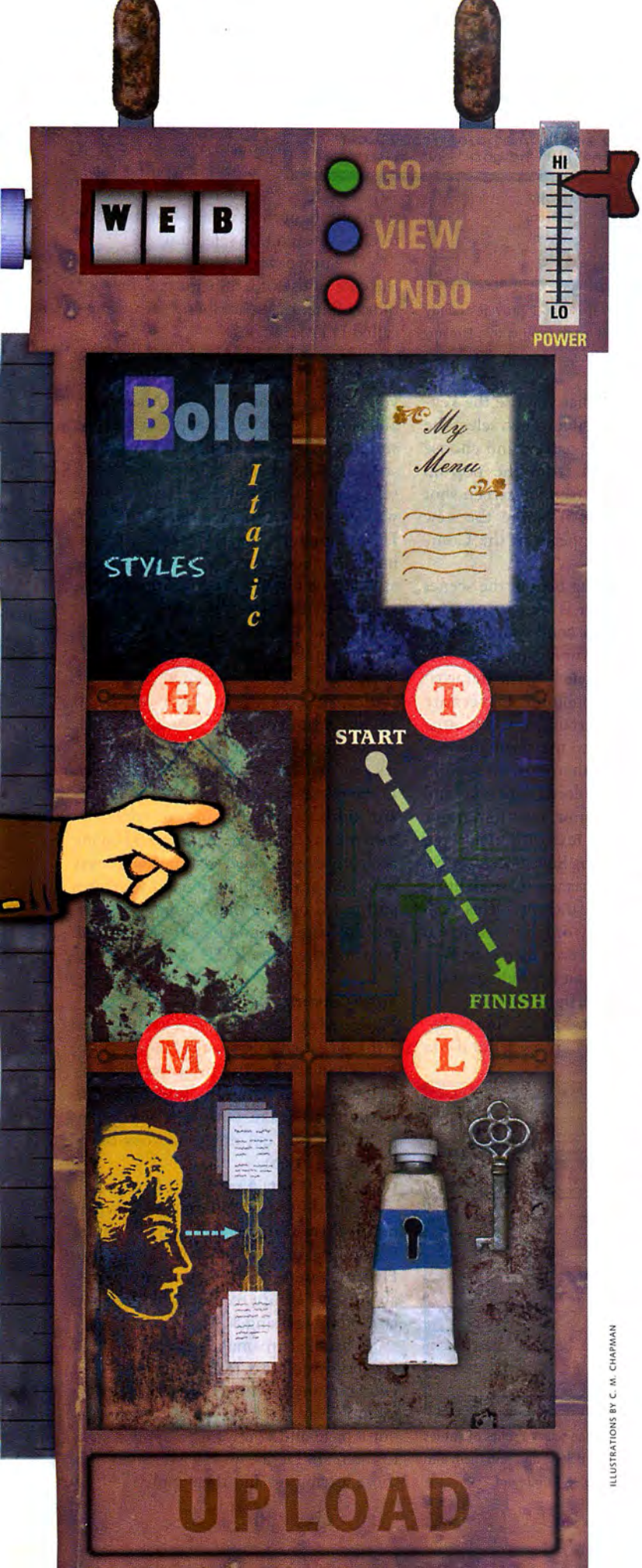
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ILLUSTRATIONS BY C. M. CHAPMAN

WAKE UP YOUR WEB SITES

Introducing Dreamweaver 3's Timesaving Tricks and Cool New Techniques

BY TOM NEGRINO

TOOLS FOR WEB DESIGNERS HAVE COME A LONG way. No longer do Web-page creators struggle with a mélange of lousy programs to get the job done. Whether you're a code-shy graphic designer, a jaded HTML geek, or someone in between, you can probably find a Web tool that fits your skill level.

Now, Macromedia's $299 Dreamweaver 3 (upgrade, $129; 800/457-1774, www.macromedia.com) is hitting the scene, offering an unprecedented mixture of friendly visual tools and fast, powerful access to the HTML code that underlies all Web pages.

This new version builds on the program's traditional strengths; adds a slew of features that enable collaborative teams to work together to build sites; and, of course, supports the latest other programs from Macromedia, such as the new Fireworks 3 (see the sidebar "Fireworks 3 Fights Back").

Better Web Pages

The quality of your individual pages is the ultimate test of your skill as a Web developer—and Dreamweaver 3 doesn't disappoint in this department, with new features that make it easier and faster to create first-rate Web pages and meet deadlines.

Tags on Demand Perhaps the most innovative new feature in Dreamweaver 3 is Quick Tag Editor, a pop-up window that allows you to view and edit the underlying HTML code for any object while you're still in the visual editing environment. Previously you

had to take time to switch out of visual editing and open an HTML window to get at the code. With Quick Tag Editor, you can peer beneath the surface of your document.

To invoke Quick Tag Editor, select an object and choose Quick Tag Editor from the Modify menu, or better yet, press ⌘-T. The free-floating Quick Tag Editor appears, showing you the HTML associated with that object (see the screen shot "Code on Demand"). To help you write code, a pop-up hints list appears when you pause while typing in Quick Tag Editor, showing you a list of all the HTML tags Dreamweaver understands. The hints list is context-sensitive, so if you pause on a particular tag, a list of its attributes appears.

Quick Tag Editor is terrific for quick edits, and you see the results immediately. Let's say you've inherited a table from your predecessor and it has a border 10 pixels wide and cell spacing of 8 pixels. You want a cleaner look, so you select the table and press ⌘-T to call up Quick Tag Editor. In the Edit Tag window, change **border=10** to **border=1**, and **cellspacing=8** to **cellspacing=0**. Then press the enter key to accept your changes, and the table assumes its new look. You could also use the floating Properties palette to modify these attributes, but hardened HTML code jockeys will find using Quick Tag Editor a much more familiar and efficient way of making changes.

History Palette The ability to undo a mistaken action is good, but having almost unlimited undo's is even better. Dreamweaver 3's new History palette keeps track of what you've done, and a slider bar lets you move backward and forward through your actions (you set a preference for the number of undo's available, but most people won't need to go beyond the default setting of 500). If you want, you can even select and replay one or more steps.

However, the undo feature is limited to actions you take from the keyboard; if you drag out a table with the mouse, the History palette can't track and repeat the action. But if you insert and specify the table's attributes with keyboard commands, you can replay them as much as you want.

Have you ever done a bunch of intricate formatting and wished you could save your steps so you wouldn't have to do them again? With Dreamweaver 3, you can. You'll need to perform the actions once, making sure that you use the keyboard whenever possible. Then select the steps in the History palette and choose Save As Command from the pop-up menu in the palette (see the screen shot "History Repeating"). Name the new command, and it appears in the Commands menu.



Code on Demand Pressing ⌘-T provides handy instant access to HTML code from within Dreamweaver's graphical interface.

What's happening behind the scenes is that Dreamweaver is translating your steps into JavaScript code and then saving that code in a form it can reuse.

A New Kind of Style No matter what kind of site you're building, chances are you've settled on a certain set of type attributes you're going to use throughout—say, slightly larger than normal type in Arial or Helvetica, colored dark blue, and in boldface. Up to now, most programs have let you format text with **** tag attributes or Cascading Style Sheets (CSS), and Dreamweaver 3 retains these abilities. Both approaches have their problems. CSS styles display reliably only in version 4.0 or later browsers, and even then your Web pages can look different depending on the end user's browser version.

In general, **** tag attributes display accurately in any browser, but if you want multiple attributes as in our earlier example (bold, blue, and larger), you have to apply them individually—and repetitively—to each text selection.

Dreamweaver 3 has finally merged the ease of use of CSS with the compatibility of **** tag attributes, in a feature called HTML Styles.

The new HTML Styles palette, which displays all the styles for the site you're working on, holds both character and paragraph styles. To apply a style, you simply select some text and click on the style name. You can create new styles by selecting text that's already formatted the way you want and then choosing Text: HTML Styles: New Style. In the resulting dialog box, you give the style a name and add or modify other font and paragraph attributes as you see fit (see the screen shot "Stylin'").

Dreamweaver stores a site's HTML Styles in an XML document in the site folder, making the styles available to anyone who works on your site. (XML stands for Extensible Markup Language; it's a more flexible cousin of HTML that Dreamweaver uses to store many different kinds of data, including styles, its own menus, and page templates.) Having a separate style sheet also makes it easy to collaborate with other workgroups and helps ensure that companies with multiple sites maintain a consistent look by using the same XML style sheet.



History Repeating You can select a series of entries in Dreamweaver's History palette and turn them into a macro by choosing Save As Command.

Time-Savers

With its big new features, Dreamweaver 3 should satisfy your lust for more, more, more power! Yet the program also has lots of small but useful improvements that will make your work go more quickly and cut down on your boredom quotient.

Do That Again! This year's "Cool, but why didn't it do that before?" award goes to the new Repeat Last Action feature, which works with the History palette to give you the remarkably useful ability to redo whatever you last did by pressing ⌘-Y.

This feature makes quick work of crashingly dull text-formatting jobs when you combine it with HTML Styles. For example, say you have subheads throughout a page and you want to apply a style to them all. Define an HTML Style with those attributes, and then apply the new

Making Dreamweaver 3 Work Magic

BY DORI SMITH

EVERYONE LIKES TO WATCH A MAGICIAN performing a routine. But while some people simply enjoy magic tricks as entertainment, some of us remain frustrated until we've figured out how the magician did it.

Dreamweaver 3 is a lot like that magician. You can simply sit back and enjoy its magic, or you can go behind the scenes of the software and learn its tricks yourself. The advantage of the latter approach is that you can then *change* its tricks—not only can you pull a rabbit out of a hat, but you can also change that rabbit to a mouse or even an elephant if you choose. All it takes are three magic words: *HTML, JavaScript,* and *XML.*

Start your quest for knowledge by finding the Configuration folder inside your Dreamweaver folder. Inside this folder and its subfolders lie hundreds of HTML, JavaScript, and XML files. Dreamweaver uses these files for just about everything it does—if you change any of them, you can change the way the program behaves.

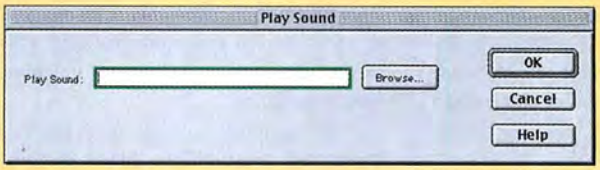
. . . A Rabbit Out of My Hat

When modifying Dreamweaver, you must change the right file to achieve the right effect. Here's a tour of the Configuration folder to show what's hiding where. (A word of warning: Before changing a file, always make a copy of it first. That way, if things don't go right, you can just put the original back and start again.)

Behaviors This folder contains two subfolders: Actions and Events. You can create a Dreamweaver behavior when you combine an event with an action, in a cause (the event) and effect (the action) relationship. The Events folder consists of one HTML file per browser type, each containing a list of the events that browser supports. The Actions folder contains an HTML file for every possible action in Dreamweaver, and many of these have a corresponding JavaScript file.

As an example, say you want to play a sound when the user mouses over an image. You'd need to combine the onMouseover event with the Play Sound action. When you choose Play Sound, Dreamweaver displays a dialog box that's defined in the file Play Sound.htm, located in the Actions folder (see the screen shot "Let's Play"). The Actions folder also contains Play Sound.js, which stores the JavaScript code that Dreamweaver inserts in your page to make a sound play.

Commands Each item in Dreamweaver's Commands menu corresponds to an HTML file in the Actions folder. (While behaviors add an action to your page, commands act upon the page itself.) For instance, the Clean Up HTML command gets its dialog box from the Clean Up HTML.htm file, and the JavaScript file Clean Up HTML.js handles the actual cleanup.



Let's Play An HTML file is at the heart of this Dreamweaver dialog box.

Inspectors This folder contains the HTML and JavaScript files that modify the Property Inspector floating palette for particular tags. When you want to change the **<title>** tag, for example, the Property Inspector palette gets its dialog box from the title.htm HTML file. The title.js JavaScript file then does the actual work of changing the title of your page.

Menus This folder contains two items: menus.xml and the MM folder. The MM folder holds files that correspond to every command in every Dreamweaver menu. The menus.xml file tells Dreamweaver under which menu and in what order those commands should appear, as well as what keyboard shortcuts to assign them. To change Dreamweaver's menus, you just change this file. Removing lines from this file is a handy way to create a streamlined and simplified set of menus for less savvy users.

Objects When first installed, this folder contains six subfolders: Characters, Common, Forms, Frames, Head, and Invisibles. Each of these corresponds to a submenu in the Objects palette and to an entry in the Insert menu. In addition to an HTML file, each object has a corresponding GIF file containing the icon for that object in Dreamweaver's Objects palette. To add a new object, just add a GIF and an HTML file. To add a new subfolder, create a new subfolder in the Finder and put your desired objects in it.

Start-up If you want a command to run every time you launch Dreamweaver, all you need to do is write an appropriate HTML file and put it in the Startup folder. Similarly, if you want a command to run whenever you quit Dreamweaver, add a Shutdown folder (it doesn't exist at installation) containing your HTML command file.

For each of the above folders, modifying the enclosed files enables you to change how a command or behavior acts within Dreamweaver.

Nothing Up My Sleeve . . .

Not only can you add, change, and delete extensions in *your* copy of Dreamweaver, but you can pass your changes on to others, too. A number of Web sites also offer Dreamweaver extensions for download; two of the best are Dreamweaver Depot, at http://people.netscape.com/andreww/dreamweaver/, and the Dreamweaver Extensions database, at www.idest.com/cgi-bin/database.cgi.

Combine downloadable extensions and your own modifications, and you can create a version of Dreamweaver 3 unlike anyone else's—one that uniquely fits your work habits. When the tricks you've performed with your Web authoring program of choice amaze your audience, just smile and say, "It's magic."

DORI SMITH is a coauthor, with Tom Negrino, of *JavaScript for the World Wide Web: Visual QuickStart Guide,* third edition (Peachpit Press, 1999), and author of *Java for the World Wide Web: Visual QuickStart Guide* (Peachpit Press, 1998).

Fireworks 3 Fights Back

BY KATHRYN LUNSFORD

PUTTING TOGETHER PAGES ISN'T A WEB designer's only task. You've got to have content for those pages—and often that means preparing lots and lots of graphics. It's fortunate that Dreamweaver 3's companion product, the $199 Web-graphics utility Fireworks (upgrade, $99; with Dreamweaver, $399), has also received an update.

Fireworks is locked in a tough fight with Adobe Photoshop. Adobe has rolled Web-graphics features into Photoshop 5.5 and includes Fireworks competitor ImageReady with every copy of the program. To fight back, Fireworks 3 incorporates many of the graphics effects on which Photoshop veterans have come to depend, while adding some impressive automation features both new and seasoned Web designers will appreciate.

Take It Easy

Summed up in one phrase, Macromedia's vision for Fireworks would be, "Don't work so hard!" Most of the new features in Fireworks 3 aim at providing maximum flexibility while eliminating repetition.

No addition embodies this directive better than the new History palette. Although at first glance this feature may appear to be little more than a cheap imitation of Photoshop's own History palette, behind that less-than-glamorous face is a useful tool that not only removes mistakes but also automates tasks at the click of a button.

Making History The History palette is a close cousin of Fireworks' Undo command. But unlike the latter, which requires you to backstep through recent actions one at a time, the History palette lets you undo and redo multiple editing steps with a few clicks (see the screen shot "Room for Error").

As you work, Fireworks records a complete list of all recent actions in the History palette. To return to a previous setting, you simply move the palette's slider up and down the list of steps; the page updates to reflect the selected stage of the design.

Say you've spent ten minutes making a series of changes to your image, but now you're not sure you want them. By clicking back and forth in the History palette, you can do quick before-and-after comparisons and judge whether the alterations are worth keeping. If not, place the slider on the last version you like and revert to that one. You can even undo Save commands if you accidentally wrote over a previous version of your document.

How many actions the History palette records is up to you (the default setting is 20), but the more actions you save, the more Fireworks taxes your Mac's memory.

Redoing Commands Just as impressive as the ability to undo commands is the ability to *redo* them at will. As with Dreamweaver 3, Fireworks 3 allows you to select groups of actions from the History palette and save them as independent commands.

For example, say you've created a navigation bar with ten black buttons, each with a unique shape. At the last minute, your client decides that all these buttons should be green, with beveled edges and a texture. Rather than changing them one at a time, just change the first one, select the relevant steps from the History palette, choose Save As Command from the palette's pop-up menu, and specify a name. Now all you have to do is select the other buttons one at a time and choose your new command from the Commands menu.

Since commands are just JavaScript files, you can share them with coworkers—whether they're working in Fireworks on Macs *or* on Windows PCs—who need to make similar changes. By standardizing a project's design specs—say, the standard options for generating a beveled button—in a JavaScript file, you can ensure a consistent look in all your project's graphics.



Room for Error The History palette lets you quickly toggle between your current document and earlier versions, and a pop-up menu even lets you save a group of commands for later reuse.

Take Control of Images

Editing photographs in Fireworks can be a frustrating experience—one that probably drives most Fireworks users back to Photoshop regularly. Fireworks' greatest weakness has always been its limited support for editing bitmapped images. For example, in past versions it provided no way to adjust the contrast or colors for imported photographs—two of the most basic functions for any image-editing tool. If you brought a Photoshop file into Fireworks, you lost the ability to edit layers and layer effects.

True Colors In Fireworks 3, Macromedia has begun to address some of these shortcomings. The most useful improvement is the addition of image-correction tools such as brightness and contrast, hue and saturation, levels and curves. This means you no longer have to turn to another program, such as Photoshop, to fix photos that need only basic image editing. Designers can adjust colors, remove scratches, and sharpen photos, all within their Fireworks document.

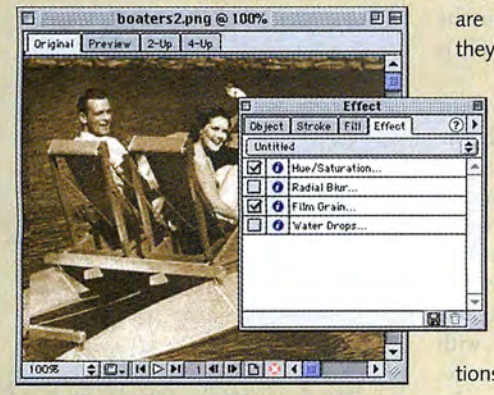
Fireworks 3 also allows you to incorporate your favorite Photoshop filters and plug-ins. You can even use these filters on vector graphics and text without rendering them uneditable. Whereas earlier versions of the program transformed text and vector graphics into bitmapped images before applying filters such as Motion Blur or Spherize, Fireworks 3 retains the selection's original format. You don't have to start from scratch if you discover a typo after applying a filter such as Fire (part of Alien Skin Software's Eye

Candy) to your company's logo. Just fix the type with the text tool, and the filter will apply to the new text.

If you do need to use other image-editing programs, you can do so with impunity. Fireworks 3 now opens native Photoshop and Adobe Illustrator documents and preserves their editable layers and effects palettes.

Special Effects The retooled Effect palette is an indecisive designer's dream. Although similar in nature to the History palette, the Effect palette is both more flexible and less comprehensive. It saves a complete, editable record of the filters applied to an image. Each image has its own Effect palette that you can edit at any time. You can turn filters on or off independently at any point, experimenting to find the perfect combination of filters and effects without worrying about data loss (see the screen shot "Reapplying Effects").

Let's say you've got a photograph you want to incorporate into your Web site. To give it a slightly faded look, you might tweak the hue and saturation settings. As a finishing touch, you might apply the Radial Blur and Noise filters. If you decide after you're finished that the Radial Blur is too distracting, you can simply uncheck a box in the Effect palette, and the effects of that filter disappear, leaving all your other effects intact. Change your mind later on, and all you have to do to restore the initial blur effect is check the box and turn that filter back on.



Reapplying Effects Use the Effect palette to experiment with your favorite filters and plug-ins. The palette records every effect applied to your image; you can toggle effects on and off via the corresponding check box.

As with the History palette, you can save combinations of effects and apply them to other images for maximum efficiency. This means that once you find the perfect combination of effects, you can reuse them on all of your photographs with a single click.

Seeing Is Believing

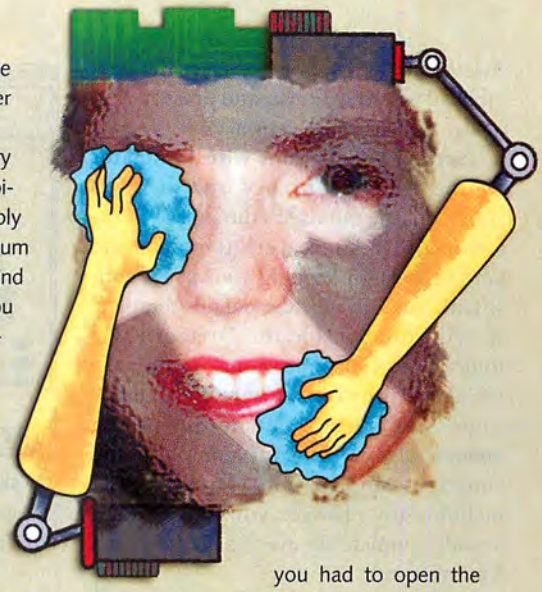
Perhaps the most frustrating aspect of Web design is the almost total lack of control over the viewing environment. Differences in Web browsers, monitors, operating systems—including various versions of the same operating system—mean there's no way of knowing exactly what your viewers will see.

Gamma Hooray The gamma value determines how light (or dark) a monitor displays an image's midtones. Windows uses a higher gamma value than the Mac OS, causing beautifully rendered images from your Mac to look dark and muddy on a colleague's PC.

Many Web designers try to compensate for this difference by blindly lightening photos on the Mac and hoping they'll look okay on Windows PCs. Fireworks 3 takes some of the guesswork out of color correction with a Windows gamma setting—turn it on by selecting Windows Gamma in the View menu. This way you can switch back and forth between the Windows and Mac gamma until you find the best compromise for your images.

Effortless Previews Still, no matter how great your images look to you, they are useless if they're so enormous that they crash your viewers' computers. One of the unique features that made Fireworks an early success was the way it helped designers find a compromise between image quality and compact file size. It let users quickly compare the differences between multiple image settings via the Export Preview window, which simultaneously displayed as many as four variations on the original image.

Unfortunately, that window was the *only* place where you could see the effects of size-slimming changes; to see how a particular design element would look when you saved it as a GIF or JPEG, you had to open the Export Preview window, adjust your settings, and then cancel.



Well, no more—in Fireworks 3, without ever leaving the workspace, you can see what your designs will look like. Tabs at the top of the document window let you switch immediately among your work areas and three different windows for previewing how your graphics look on the Web. The 2-Up and 4-Up windows offer multiple views of the same image for comparing the results of different file formats.

You can also use the preview tabs to immediately test rollovers (another of Fireworks' specialties). Previously you had to export the images, tell Fireworks to generate an HTML document, and open that document in a browser window before knowing for sure that your rollover worked correctly. Now you can easily see how your rollovers will work, by switching to your Preview window and running your mouse over the graphics.

The Last Word

Evolution on the Internet is measured in weeks, not years. Companies don't just create a site and say, "Well, that's that!" Instead, they continue modifying and expanding it—sometimes daily. This results in large teams working together under tight deadlines.

Will Fireworks survive the competition from Photoshop? That's up to the users to decide. But with its tight Dreamweaver integration and bevy of new timesaving features, it's certainly got a chance.

Assistant Editor KATHRYN LUNSFORD teaches desktop publishing at the University of California, Berkeley Graduate School of Journalism.

style to the first subhead. Select the next subhead with the mouse, and press ⌘-Y to repeat the style application.

Setting Foundations with Templates On the Web, consistency isn't the hobgoblin of little minds; it's the sign of a professional. Dreamweaver's templates are perfect tools for keeping your pages consistent. You can edit the default template (you'll find it inside the Dreamweaver folder, in Configuration: Templates: Default.htm) to make sure that all the pages you create contain the proper **<meta>** tags, with your company and copyright information. Dreamweaver includes any changes you make to the default template on every page it creates from then on.

Clearing Cobwebby Code You don't just build a Web site and leave it—it requires regular maintenance to stay vital. Cleaning up old HTML code is a dull task that you probably know better than you ever wanted to and would love to simplify. You might need to clean up old code that a previously used WYSIWYG tool employing proprietary tags left behind—Adobe PageMill, say. Or you might want to strip out old, deprecated tags from previous versions of HTML. You can use the search and replace features in Dreamweaver 2 or 3, along with regular expressions, as your garbage collector. Here's how, with the hated **<blink>** tag as our example.

Choose Replace from the Edit menu. From the pop-up menu next to Find In, choose whether you want to apply your changes to the current document, the current site, or a folder that you select.

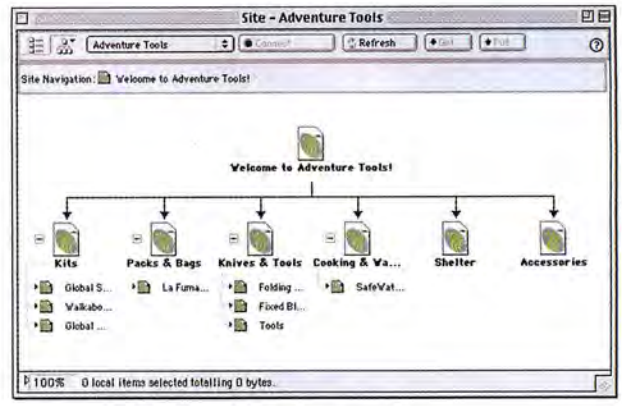
Set the Find What pop-up menu to HTML Source, and click on the Use Regular Expressions check box.

Type the following inside the Find What box: **<blink[^>]*>**. Don't type anything in the Replace With box. That regular expression (see "Transform HTML with Regular Expressions," *Create*, November 1998) selects the opening **<blink>** tag, and if the tag has any attributes, it selects those, too.

Click on either the Replace or Replace All button.

To get rid of the closing tag, type **</blink>** in the Find What box and then click on either the Replace or Replace All button again.

Instant Site Prototyping People tend to use Dreamweaver's Site Manager feature mostly to detect and mend broken links, upload and download files from the remote server, and ensure that only one person is editing a file at any given time. But Site Manager is also perfect for creating and mapping out the initial structure and pages of your site. After you've done—offline—the really hard work of figuring out the structure of your site (see "Dress It Up," November 1999), the Site Map window lets you add the actual individual pages and linked pages to your site, complete with page titles and text links between pages.



Site Skeleton Dreamweaver 3 lets you create the structure of your site, including links, before you get down to the business of designing pages.

Working with the site structure as a whole before you get bogged down in designing individual pages will help you organize your site better and make it easier to navigate. After you create the pages you need, you can open them up from the Site Map window to get started on design.

To begin building your site, first define a new site by choosing New Site from the Site menu, giving the site a name and picking the local site folder. Then choose Site Map under the Window menu. The icon for the home page of the site will be in the Site Map window, as the home-page file is created along with the new site.

To create a new linked file, control-click on the home page's icon and choose Link To New File from the contextual menu. In the dialog box that appears, name the new HTML file, give the page a title, and enter the text for the link. When you click on OK, Dreamweaver creates the HTML page and an icon for the new page appears in the Site Map window, with a line connecting it to the original page. To create more linked pages from the home page, repeat the process.

You can also add text links to any page with the same technique. A page's text links show in the Site Map as a line of smaller pages under and connected to their parent page (see the screen shot "Site Skeleton").

Cleaning Up After Microsoft Office A lot of Web content starts out life as Microsoft Word documents. Word makes it easy to save its documents in HTML format, and since Word handles text and graphics, you might think you could dispense with programs like Dreamweaver.

That may be true for very small sites, but Word's limitations for larger Web sites quickly become apparent. The trouble is that extra code bloats Word-generated HTML documents, making your page load and display slower than it should. The larger a page is, the longer it takes to get through your modem to your browser, and the more time and effort a browser must expend to display the convoluted code.

Dreamweaver 3 solves this problem and saves tons of boring code-stripping work with its impressive new Clean Up Word HTML command. Invoking this command on your Word-generated HTML files can quickly shrink file sizes by as much as 50 percent.

There's help in Dreamweaver 3 for Microsoft Excel users, too. Rather than



Stylin' HTML Styles work a lot like a word-processing program's style sheets: once you've set up attributes, you can apply them anywhere you like.

saving spreadsheets and other tables from Excel as Web pages, and then cleaning up Microsoft's messy HTML in Dreamweaver, use the new Insert Tabular Data command to convert any text-only delimited file into a clean table. You can then use Dreamweaver's unmatched table-editing and -formatting abilities to tweak the data's appearance.

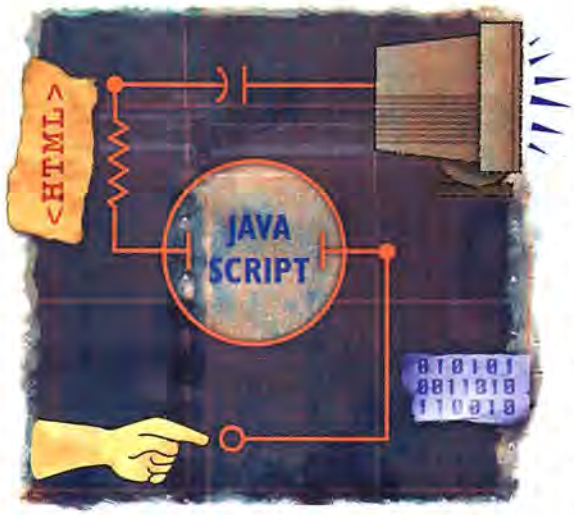
Improving Teamwork

As Web sites get bigger, more complex, and more central to many businesses' corporate strategies, they've become too much for one person or even a small team to handle. It's not unusual to have dozens of people contributing to major corporate sites, including designers, content writers, graphic artists, and programmers. Professional-level tools need to offer team management features. Dreamweaver 3 improves site management and adds many other features that make it easier to share sites in a workgroup.

Keeping Collaborators Posted One of the biggest hassles Web teams face is keeping track of who made what changes to a particular file, and when. Some teams try to deal with this problem by sending e-mail detailing changes. More-sophisticated teams might use a central database to hold change notes. The problem with both these solutions is that the change records don't stay with the file, so they're easy for others to overlook.

Dreamweaver 3's new Design Notes track your changes to HTML pages and let you add date-stamped comments that your coworkers can view and edit. A Design Note for one of your HTML pages is a separate XML document that Dreamweaver keeps in a Notes folder, so it doesn't add to the size of your production file. And since the folder doesn't get uploaded, it doesn't waste space on your server, either.

Staying in Sync with Sites With its new feature that synchronizes local site folders and remote servers, Dreamweaver 3 plays catch-up with competitor Adobe GoLive. This feature ensures that you're never working on an outdated page. The file-synchronization feature compares files in both locations and lets you know which files need replacing. You get to choose whether to give priority to local or remote files, and you get a summary of all the files that Dreamweaver proposes to move. You can override the program's recommendations on a file-by-file basis.



If you've made wholesale deletions from your site, Dreamweaver can remove files on the local or remote sides to keep both sites in sync.

The Sky's the Limit

Customization is an important part of Dreamweaver's appeal, and Dreamweaver 3 lets almost anyone take advantage of its extensibility. For example, if you have attractive content on your site, sooner or later some other site managers will hijack your content into a frame on their site. You can tell your pages to burst out of other people's frames, so long as you know how to program this with JavaScript.

With Dreamweaver 2, it was much easier to add features to the program via JavaScript. You could add new behaviors and commands and even change the program's property inspectors if you were proficient with HTML and JavaScript. So adding a script that took your pages out of someone else's frame set became as easy as dropping a JavaScript file into Dreamweaver's Actions folder. A cottage industry of JavaScript coders sprang up to support Dreamweaver's extensibility, writing hundreds of new actions, objects, and commands. In fact, if you're thinking of writing a Dreamweaver extension, check the Dreamweaver Extension Database, at www.idest.com/cgi-bin/database.cgi, and make sure no one's already thought of your idea. There's no point in reinventing the wheel.

Dreamweaver 3 takes this customization to an almost absurd level. Literally everything in Dreamweaver—menus, dialog boxes, palettes, and functions—is defined by some combination of XML files, HTML files, and JavaScript.

Because the entire menu system in Dreamweaver is accessible, corporate departments and Web design shops can create custom versions of Dreamweaver with little effort, adding and removing keyboard shortcuts, menu commands, property inspectors, and other features to suit their needs or the needs of their clients. You can give a customized version of Dreamweaver to your clients so that they can make routine content changes and even create new pages from your templates without messing up your designs—all of which frees you from day-to-day content maintenance. (See the sidebar "Making Dreamweaver 3 Work Magic" for details on how to modify Dreamweaver 3 to suit you.)

The Last Word

Dreamweaver 3 is an impressive successor to an already good Web design tool. With new features such as HTML Styles and Microsoft Office cleanup, it's easier than ever to create pages and whole sites with Dreamweaver. But you never sacrifice your control over the HTML—instead, tools such as Quick Tag Editor strengthen it. Dreamweaver 3 directly targets advanced Web-site developers, and Macromedia keeps adding features at the request of hardcore Web geeks.

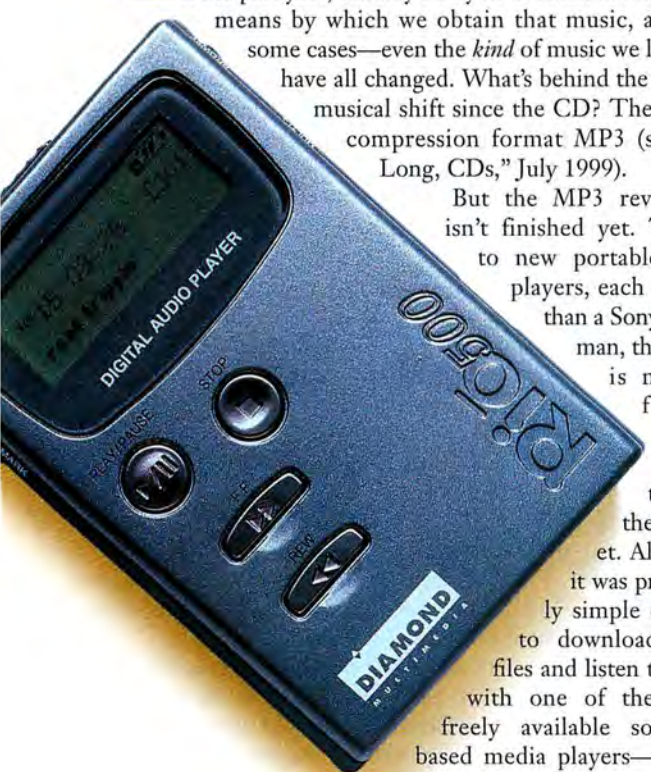
The arrival of Dreamweaver 3 is the opening salvo of the latest round of innovation in Web design tools, and Macromedia's chief rival, Adobe Systems, is sure to return fire with the next version of GoLive. But Dreamweaver 3 certainly demonstrates that there's plenty of room for innovation in sophisticated Web publishing tools. Even if Adobe and Macromedia continue to slug it out, the real winners are professional Web-site developers, who will surely benefit from the software improvements that arise from the struggle. **m**

Contributing Editor TOM NEGRINO is a coauthor of *JavaScript for the World Wide Web: Visual QuickStart Guide*, third edition (Peachpit Press, 1999).

The author thanks Joseph Lowery, author of *Dreamweaver 2 Bible* (IDG Books Worldwide, 1999), and Massimo Foti of The Fantastic Corporation for their Dreamweaver tips and insights.

MP3 TO

by CHRISTOPHER BREEN



In the past year, the way many of us listen to music, the means by which we obtain that music, and—in some cases—even the *kind* of music we listen to have all changed. What's behind the biggest musical shift since the CD? The audio-compression format MP3 (see "So Long, CDs," July 1999).

But the MP3 revolution isn't finished yet. Thanks to new portable MP3 players, each smaller than a Sony Walkman, the music is moving from the desktop to the pocket. Although it was previously simple enough to download MP3 files and listen to them with one of the many freely available software-based media players—QuickTime 4.0's QuickTime Player (www.quicktime.apple.com) among them—if you wanted to *tote* your tunes, you had to do so using a PowerBook. Hardware-based MP3 players—such as Diamond Multimedia's Rio 500 and Pontis Electronics' MPlayer3 (see the sidebar "Taking It with You"), as well as similar, soon-to-be-released devices such as I-Jam Multimedia's I-Jam MP3 Player—now make it easy for Mac users to take their tunes on the road. We'll show you how it's done and provide some tips for making the most of your MP3s.



What's MP3?

For those who missed its debut, MP3 (technically known as Moving Picture Experts Group Audio Layer III) is a technology that allows you to compress audio files to approximately one tenth the size of CD files while maintaining a large degree of fidelity. In other words, your music sounds pretty good. This smaller size makes MP3 files highly portable—perfect for transmission across the Internet.

Thanks to this portability, the increasing number of people with online access, faster Internet connections, and the Web's spirit of free exchange, MP3 is quickly becoming a viable means of music distribution. Musicians now have a way to expose their own work to a large audience—an audience that might not have heard their music otherwise—without becom-

Take Control of Your Music—on Your Mac or on the Road



ing entangled in the machinations of the music industry. And fans of such bands as the Grateful Dead and Phish—groups that encourage free distribution of their concert recordings—can now legally collect dozens of performances for free.

Bring It on Home

You can find an abundance of MP3 files on the Internet. Once you start to look, you'll discover them scattered about on Web sites, attached to messages in newsgroups, and tucked away on underground servers.

Although many of the files have been placed on the Web by their copyright holders, some have been posted in violation of copyright laws—uploaded by individuals who have no legal right to distribute them. (Downloading these files is against the law, too.) However, generally speaking, the most visible MP3 sites, such as Live365.com, MP3.com, and the Internet Underground Music Archive (www.iuma.com), carry only legal MP3 files. The files offered on these sites are from artists who aren't represented by major record labels.

Not too surprisingly, record companies have mostly shunned MP3. The idea that unsecured, highly transportable, high-quality audio files can be swapped across the Web is a daunting reality for many record-company executives who fear losing both money and control over distribution. However, because MP3 is so pervasive, major recording artists who understand the promotional value of free music are beginning to release selected cuts—or portions of cuts—in the MP3 format.

PHOTOGRAPHY by KEVIN CANDLAND

Helter Skelter Given the ease with which MP3s can be created and distributed, illegal sources of MP3 files have sprouted haphazardly in cyberspace—pirate locales such as many of the Hotline servers. Hotline is similar to Fetch and Anarchie (File Transfer Protocol programs), but has messaging and chat functions and its own method of speedy file transfer. Although you can still find individual songs and even full albums on many Hotline servers, threats of prosecution for copyright violation have put a bit of a damper on the number of MP3 files available at such sites.

Not everything on Hotline servers is illegal, however. Some small bands post their songs there, and many such servers offer MP3 files with live recordings of bands who allow and encourage trading. In fact, both Phish and the Grateful Dead have updated their official trading policies to include the transferring of MP3 files.

If you're ready to take the Hotline plunge, download the software you'll need from Hotline Communications (www.bigredh.com) and check out Hotline Central (www.hotlinecentral.com). Hotline servers come and go very quickly, and this Web site keeps a list

of operating trackers (each of which tracks up to roughly 1,000 servers) along with their online addresses.

Listen to the Music Play

Pulling an MP3 file from the Web is no different than downloading any other file. But once that file is on your Mac, you must use a program to play it. Although Apple's free QuickTime Player can play MP3s, it's not really an ideal tool. It doesn't support files encoded using variable bit rate (a less common method of encoding MP3s), nor does it support *playlists*, or groups of songs. With QuickTime Player you have to play each individual track in a new movie window or cut and paste multiple tracks into a single movie.

Making a List Although QuickTime Player doesn't natively support playlists, you can download Tonio Loewald's $5 shareware program QuickMP3 (www.zipworld.com.au/~tonio/quickmp3.html), which lets you create playlists that work with QuickTime 4.0. Regrettably, QuickMP3 does little more than create playlists and offer a simple player interface—it lacks the niceties of other MP3 players, such as control over equalization (EQ), the ability to change track names within the program, and a Get Info command that reveals the bit rate at which the files were encoded. The higher a file's bit rate (the more data as measured in kilobits of information per second), the better the sound quality.

You can get more-complete MP3 players on the Web. These include Norman Franke's free SoundApp (www-cs-students.stanford.edu/~franke/SoundApp/); Oliver Dreer's free MPEG Audio Realtime Player (www3.pair.com/odreer/); and @soft's $25 Macast, formerly called MacAmp (www.macast.com). Our current favorite downloadable MP3 player is Panic Software's $18 shareware Audion (www.panic.com/ppack/audion/). Audion also supports audio-CD and streaming Internet play and comes with a variety of attractive *skins*, or user interfaces. Casady & Greene's $50 SoundJam MP (800/359-4920, www.soundjam.com) is a fine commercial player that can also encode MP3 files.

It's My Party

Although the Internet is a great place to find MP3 files, you likely have a fine resource in your own home—your CD, album, and tape collection. Using your Macintosh, an MP3 encoder, and—optionally—an audio-editing application, you can turn your music collection into a hard disk full of MP3s.

Transforming, or *ripping*, CD tracks into MP3s is a snap (they're already digital files), but you'll need an MP3 *encoder* to do so. Finding free or inexpensive MP3 encoders is not so simple. At one time you could use Rafael W. Luebbert's MPecker Encoder to encode MP3 files. But because of licensing issues, MPecker Encoder is no longer available and old versions of the utility have since expired.

This narrows your choices to commercial encoding utilities such as the above-mentioned SoundJam MP, Xing Technology's $30 AudioCatalyst (206/674-2700, www.xingtech.com), Proteron's $35 N2MP3 (402/932-3894, www.proteron.com), and such high-end tools as MacSourcery's $395 (plus $99 for the MP3 encoder) BarbaBatch (800/622-7723, www.macsourcery.com; see *Reviews*, January 2000) and Terran Interactive's $499 Media Cleaner Pro (800/577-3443, www.terran.com; see *Reviews*, November 1999). Although all of these utilities are capable of producing MP3s, some clearly get better results than others (see the sidebar "Encode Your Own" for Macworld Lab's test results).

Disc Fever Once you have your encoder, just insert the CD you want to convert into your Mac's CD-ROM drive and import the audio files with your MP3 encoding utility. You can also import the CD tracks with QuickTime Pro, save them as AIFF files (Audio Interchange File Format, a standard Mac file format for sound), and then bring them into your MP3 encoder. Alternatively, if you have Adaptec's $99 Toast (800/442-7274, www.adaptec.com), software for burning CDs, you can use the included Toast Audio Extractor to do the job.

Old-Time Rock and Roll Encoding files from records or tapes is a little tougher, because you must connect at least one external device to your Mac's sound-in port. If you're record-

Macworld LAB TEST

Shrink 'Em Down

When it's time to turn your CD collection into MP3 files, you want them to sound their best, but you don't want to wait all day for them to encode. All MP3 encoders chop audio files down to similar sizes, but not all do the job equally well or fast. And there's not necessarily a correlation between quality and speed. Our Editors' Choice wasn't the fastest or the slowest, but it produced the best-sounding MP3 files we've heard.

Best results in red. All times are in minutes:seconds.

	ENCODING TIME		SUBJECTIVE SOUND QUALITY					
	Song 2 (128 Kbps)	Song 2 (192 Kbps)	Song 1 (128 Kbps)	Song 2 (128 Kbps)	Song 3 (128 Kbps)	Song 1 (192 Kbps)	Song 2 (192 Kbps)	Song 3 (192 Kbps)
Casady & Greene SoundJam MP 1.1	1:59	2:04	Fair	Poor	Poor	Fair	Fair	Fair
Proteron N2MP3 1.0.2	3:22	2:55	Fair	Fair	Poor	Fair	Fair	Fair
★ Xing Technology AudioCatalyst 2.0	2:38	2:39	Fair	Fair	Poor	Excellent	Excellent	Excellent

★ = EDITORS' CHOICE

Shorter bars are better.

Behind Our Tests

We performed our tests on a Power Macintosh G3/400 with 128MB of RAM, a 2MB system disk cache, and virtual memory turned off. Song 1 is the Allegro Moderato movement of Bach's Violin Concerto no. 1 in A Minor. Song 2 is "Ashby Man," by Charlie Hunter. Song 3 is "Squeeze Box," by The Who. For our timed tests, we used Song 2, which is 5 minutes and 19 seconds in length.—**Macworld Lab testing supervised by Ulyssis Bravo**

ENCODE YOUR OWN

If you've spent much time listening to MP3 files, you've probably noticed that some sound significantly better than others. Although poor-quality sound can result from low bit rates, your MP3 encoding software can also greatly affect audio quality.

Encoding a file into MP3 format involves casting away less discernible sounds (those at the extreme levels of human hearing), and each encoder varies slightly in what information it discards—resulting in a difference in sound quality. In addition to variations in quality, the time it takes to encode an MP3 file can also differ from encoder to encoder.

To find the fastest and highest-quality Mac MP3 encoding software, Macworld Lab and a panel of distinguished listeners scrutinized MP3 files generated by three of the most popular encoders on the market—Casady & Greene's SoundJam MP (800/359-4920, www.soundjam.com), Proteron's N2MP3 (402/932-3894, www.proteron.com), and Xing Technology's AudioCatalyst (206/674-2700, www.xingtech.com). We listened to these files and rated their quality as excellent, fair, or poor. We also measured how long it took for the encoders to do their work. (See the benchmark, "Shrink 'Em Down.")

How We Tested We began our tests by encoding three audio files featuring three distinct musical styles—classical, as represented by the Allegro Moderato movement of Bach's Violin Concerto no. 1 in A Minor; jazz, in the form of Charlie Hunter's horn- and guitar-rich piece "Ashby Man"; and rock, as practiced by The Who in "Squeeze Box." We measured encoding times for "Ashby Man" at 128 Kbps and 192 Kbps, using an encoding method that produces the best quality each utility is capable of. Once the files were ripped, we used QuickTime 4.0's free QuickTime Player to play them through a Power Macintosh G3 connected to an Atlantic Technology three-way speaker system.

What We Listened For MP3 makes music files smaller by dropping areas of sound the human ear can't easily distinguish. When a file has been ripped with a quality encoder at a high bit rate, the difference between the MP3 and the source file can be very difficult to hear. Generally the MP3 file will sound less crisp than the original. Cymbals, violins, and high percussive sounds lack brightness—this quality is particularly noticeable in classical music. At lower bit rates, or with poor encoding, you lose even more of the top end and begin to hear distortion and *flanging*—high frequencies and vocals take on a swooshing kind of sound.

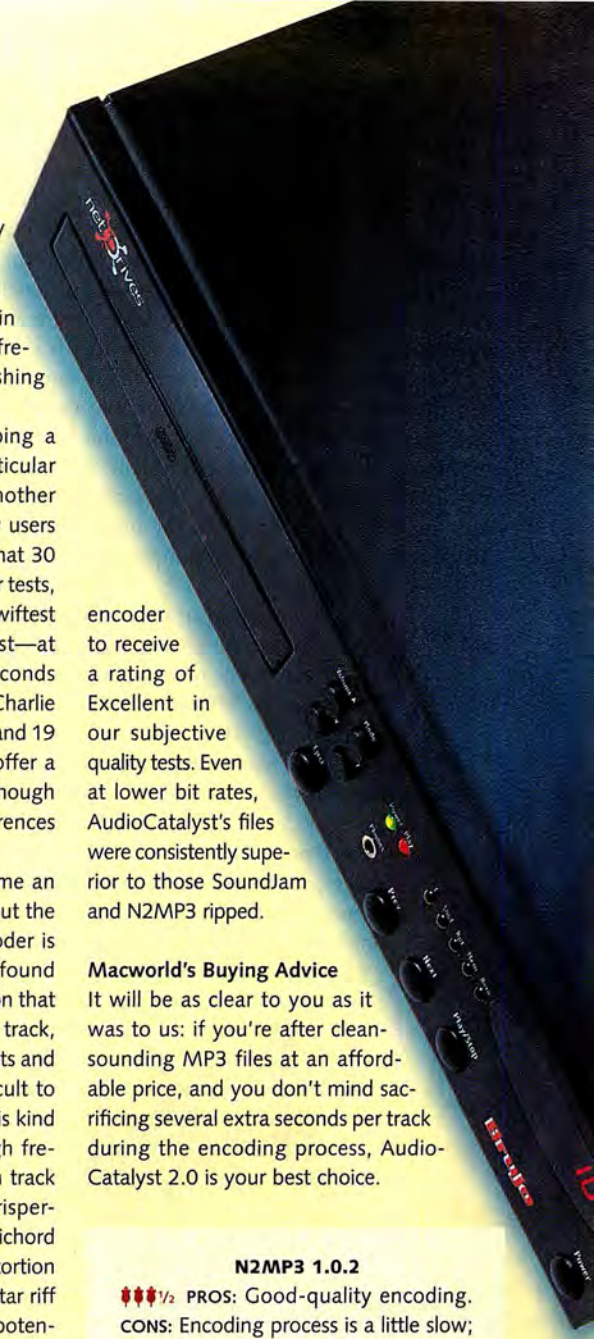
How They Fared If you're ripping a single track, the fact that one particular encoder is 30 seconds slower than another isn't a terrible burden. However, many users rip entire CDs or CD collections, and that 30 seconds per track quickly adds up. In our tests, we found that SoundJam MP was the swiftest of the bunch. N2MP3 was the slowest—at 128 Kbps it took 1 minute and 23 seconds longer than SoundJam MP to rip our Charlie Hunter audio file, which was 5 minutes and 19 seconds in length. All three encoders offer a best-quality setting, which we used (although SoundJam's is tucked away in a preferences check box).

Getting the Right Sound The time an encoder takes to rip files is important, but the most crucial characteristic of any encoder is the quality of the files it creates. We found that MP3 quality depends a great deal on that of the original file. Our Charlie Hunter track, for example, featured a lot of instruments and a midrange-heavy mix. It's more difficult to distinguish distortion and flanging in this kind of song than in those that feature high frequencies or solo instruments. The Bach track featured greater separation and crisper-sounding instruments—such as a harpsichord and violin—making it easier to hear distortion and flanging. The exposed acoustic-guitar riff that begins the Who track would also potentially suffer distortion from MP3 encoding.

However, despite using the same source files in all our subjective quality tests, we found that the quality of the MP3 files each encoder produced was noticeably different.

Making the Grade We were least impressed with the fidelity of the SoundJam files—particularly those ripped at 128 Kbps. Even through the thick mix, we could hear flanging on the jazz track. And although SoundJam's 192-Kbps files were an improvement over its lower–bit-rate efforts, they weren't as good as the 192-Kbps files from N2MP3 and AudioCatalyst.

To our surprise, N2MP3, which was the slowest at ripping files, didn't use that extra time to produce the best MP3s in our roundup. Its output was better than that of SoundJam, but its files couldn't compare to those AudioCatalyst ripped—this was the only encoder to receive a rating of Excellent in our subjective quality tests. Even at lower bit rates, AudioCatalyst's files were consistently superior to those SoundJam and N2MP3 ripped.



Macworld's Buying Advice It will be as clear to you as it was to us: if you're after clean-sounding MP3 files at an affordable price, and you don't mind sacrificing several extra seconds per track during the encoding process, AudioCatalyst 2.0 is your best choice.

N2MP3 1.0.2

●●●½ **PROS:** Good-quality encoding. **CONS:** Encoding process is a little slow; no playback features. **COMPANY:** Proteron (402/932-3894, www.n2mp3.com). **LIST PRICE:** $35.

SoundJam MP 1.1

●●●½ **PROS:** Supports both encoding and playback; excellent playlist features; fast encoding. **CONS:** Poor-quality encoding at 128 Kbps. **COMPANY:** Casady & Greene (800/359-4920, www.soundjam.com). **LIST PRICE:** $50.

EDITORS' CHOICE

AudioCatalyst 2.0

●●●● **PROS:** Superior overall MP3 encoding. **CONS:** No playback features. **COMPANY:** Xing Technology (206/674-2700, www.xingtech.com). **LIST PRICE:** $30.

ing from cassette, connect your tape deck directly to your Mac's sound-input port via a Y-cable. Use the left and right RCA jacks (the type of audio jacks found on home-stereo equipment) for the cassette deck and a single stereo miniplug (the kind used on a Sony Walkman) for the Mac. If the volume level of your tapes is wildly variable and you can't boost the volume from the cassette deck, consider boosting the signal with a preamplifier.

Pulling tracks from old vinyl LPs is more work—requiring a preamplifier between the turntable and the Mac. In most cases, it's easiest to connect your turntable to your home-stereo amplifier and then run the aforementioned Y-cable from the amplifier's Tape Out ports—the jacks used to connect the amplifier with a tape deck—to the input port of the Mac. You can also find inexpensive preamplifiers at electronics stores such as Radio Shack.

Once you have everything set up, you can capture tape and LP tracks with an audio-recording utility such as E.J. Campbell's $20 shareware program Ultra Recorder (http://members.aol.com/ejc3/Ultra.html)—be sure to capture your tunes as AIFF files. After you've transformed the songs into AIFF format, just drag them into an MP3 encoding utility.



Size Me Up

Encoders, regardless of their differences, have this in common: ripping at higher bit rates increases a file's fidelity as well as its size. For example, a three-minute file ripped at 128 kilobits per second (Kbps) occupies 2.8MB of hard-disk space; the same file ripped at 192 Kbps weighs in at 4.2MB. Depending on the encoder (and the type of music), the 192-Kbps file may sound far better than its slimmer sibling.

But you should rip at higher bit rates only if fidelity is crucial or file size is mostly inconsequential. If you're creating an MP3 file to put on your Web site for others to download—and you expect listeners with 56-Kbps modems to be downloading your file—use a low bit rate to keep file size small. In our previous example, that 1.4MB difference between the 128-Kbps and 192-Kbps files may influence whether users download your file.

Conversely, there are times when it's preferable to sacrifice file size for fidelity. You can, for instance, fit nearly 11 hours of MP3 files encoded at 128 Kbps on a CD-R disc. But if you're particular about how your files sound, you may wish to give up 4 of those hours and create a better-sounding 7-hour disc that contains files encoded at 192 Kbps. Or if you're trading recordings of Grateful Dead concerts with your Deadhead buddies, you may want to rip at 256 Kbps to ensure that every plink, plank, and plunk of Jerry Garcia's guitar is crystal clear.

Break It Down Size versus quality is also a concern if you plan to use one of the new hardware MP3 players. If you rip your files at 128 Kbps, you can fit about two hours of music on a Rio 500, although only if you use the optional 32MB flash-memory card along with the Rio's 64MB of built-in memory. Depending on the capacity of the flash-memory card you insert into the Pontis MPlayer3, you could exceed this two-hour limit by a wide margin.

Loading MP3 files encoded at higher rates to such devices doesn't make sense, given the limited capacity of hardware MP3 players. When encoding MP3s for use with these devices, you're better off ripping your audio files at 128 Kbps with the cleanest encoder you can find.

Bigger Is Better You can also err on the side of being too parsimonious with file size. If you dip below the magic mark of 128 Kbps, sound quality suffers greatly. Music encoded at 64 Kbps sounds dreadful—reserve low bit rates for speech and narration, where fidelity isn't a vital concern. If you need to create extremely small files—for QuickTime streaming or quick-and-easy download with slow modems—MP3 isn't your best choice. In these situations, use QuickTime Pro with the QDesign Codec. This encoder is specifically designed to produce extremely compact audio files for delivery over the Net. For higher-quality QDesign-encoded files, try the $399 QDesign Music Encoder Professional Edition (604/688-1525, www.qdesign.com; for more information on the QDesign Music Encoder, see *Reviews*, September 1998).

Alternative Music

All this said, MP3s aren't the only game in town. Online audio is a booming business, and other encoding options are starting to crop up. For example, the music industry uses the RealAudio format, from RealNetworks (www.real.com), to stream songs over the Web—and for a good reason. Streamed music—music that plays as the listener's Mac receives data over the Web, instead of only after entire sound files download—can be delivered quickly. In addition, those in the music business often create files you can't save to a hard disk, and the quality of many Real Audio files is so wretched that few people are interested in saving them anyway.

A Drop in the Bucket Although Real Audio is fine for streaming, the music industry is turning to another encoding format for downloadable files—Liquid Audio (www.liquidaudio.com). This new format produces high-quality audio files that differ from MP3s in that they're secure—encrypted so that only the authorized listener can play them. In addition, those who encode audio files with Liquid Audio can prevent those files from being copied to a CD-R. Finally, these files are coded in such a way that their origin can be easily identified—making it simple to locate the track's source.

TAKING IT WITH YOU

Sure, it's cool to listen to music on your Mac, but the real fun comes when you can listen to MP3s on the move. With the release of Diamond Multimedia's $270 Rio 500 (800/468-5846, www.diamondmm.com) and Pontis Electronics' $190 MPlayer3 (www.pontis.de), tiny Walkman-like MP3 players have finally come to the Mac. We had the opportunity to examine these diminutive devices, and here's what we found.

Smaller Than Life Even in these days of cell phones the size of matchbooks, you'll be surprised at just how petite the Rio 500 and the slightly larger MPlayer3 are. Both units are about the size of a deck of cards, yet each is large enough to accommodate easily accessible Play, Stop, Fast Forward, and Rewind buttons, as well as a backlit LCD.

Of the two players, the Rio has the more intuitive interface, with just a couple of buttons and a scroll wheel for navigating tracks. The MPlayer3 has a menu system that is harder to navigate. The Rio carries a USB connector and the MPlayer3 uses a serial one—meaning that the Rio works with all modern Macs and transfers files more quickly, thanks to the faster USB protocol (the MPlayer3 works only with those Macs that carry a printer or modem port).

Thanks for the Memory Both devices sport a headphone jack and a slot for inserting memory cards, those little buggers that let you store music for playback. The Rio can handle a single memory card, whereas the MPlayer3 can accommodate two. The Rio's built-in 64MB memory holds only about 70 minutes of music encoded at 128 Kbps—the MPlayer3 has no on-board memory at all, making these card slots a necessity.

Although our MPlayer3 test unit shipped with a 16MB flash MultiMediaCard, at press time Pontis said that its customers will receive either two 16MB cards or a single 32MB storage card with the MPlayer3. However, even 32MB is not enough—that amounts to only about 35 minutes of music encoded at 128 Kbps (not even a whole album's worth).

Making a Connection To get music onto a player, you need some kind of software, and the Rio 500 comes with the more generous software bundle—a limited version of Casady & Greene's SoundJam MP. The Rio's version of SoundJam doesn't contain the additional interfaces (skins) found in the full version, nor does it offer EQ (equalization) controls.

Downloading tracks to the Rio is very simple. With SoundJam open, plug the USB cable into the player; a window that contains the contents of the Rio will open. To add tracks, simply drag and drop individual MP3s or a folder full of tracks into this window. The loading process is fairly quick.

The MPlayer3 provides no Mac application for encoding or playing MP3 files, which means you can listen only to previously encoded music—unless you want to spend more money for an encoder. The player does include a simple program for downloading MP3 files, but the software, Pontis L.E.D., is not nearly as intuitive as Rio's offering. First you have to switch the player into download mode. Then you start the program and drag MP3 files into the player list. Downloading a single 9MB MP3 file from a 266MHz Power Mac G3 took nearly 30 minutes—performance that would be entirely unacceptable to any user. However, Pontis promises that it will offer a speedier, USB version of its device in the future.

Macworld's Buying Advice
As it stands now, there is no compelling reason to buy the MPlayer3. It lacks encoding software, speedy file transfer, and adequate storage. The Rio 500 is simple to operate and small enough to slip into a shirt pocket. It's also a bit pricey, considering how little playing time you get out of the unit. Although it would be nice if the Rio also offered serial transfer for those without USB (yes, even though it's slow), if you want MP3 to go—or simply lust after cool gadgets—the Rio 500 is for you. If you're on a budget, you may want to wait for an MP3 player with a more generous storage scheme.

MPlayer3

♦♦ **PROS:** Small. **CONS:** Horrible download performance; no included encoding software. **COMPANY:** Pontis Electronics (www.pontis.de). **LIST PRICE:** $190.

EDITORS' CHOICE

Rio 500

♦♦♦½ **PROS:** Simple operation; ultracompact design. **CONS:** Limited playing time; no serial support. **COMPANY:** Diamond Multimedia (800/468-5846, www.diamondmm.com). **LIST PRICE:** $270.

Liquid Audio may sound draconian to users accustomed to the laissez-faire spirit of MP3, but the fact remains that the music industry won't allow online distribution of commercial recordings unless those recordings are copy protected in some fashion.

The Last Word
Although record companies are searching for a secure means of selling music online, Liquid Audio and similar schemes hardly spell the end for MP3. The genie is out of the bottle, and the efforts of all the massed legal departments of the record companies can't put it back.

Thanks to MP3's quality and ability to make small files, available encoders and software players, the new portable hardware players, and the desire of musicians and listeners everywhere to make music accessible to all who care to hear it, MP3 is here to stay. And that should be music to everyone's ears. **m**

Contributing Editor CHRISTOPHER BREEN is a coauthor of *My iMac* (IDG Books Worldwide, 1999).


WITH ORDINARY PRINTERS, YOU SEE THE FLOWERS BLOOMING.
WITH OUR PRINTERS, YOU SEE THE LADIES DANCING.

YOU'VE GOT TO SEE IT IN **EPSON** COLOR.



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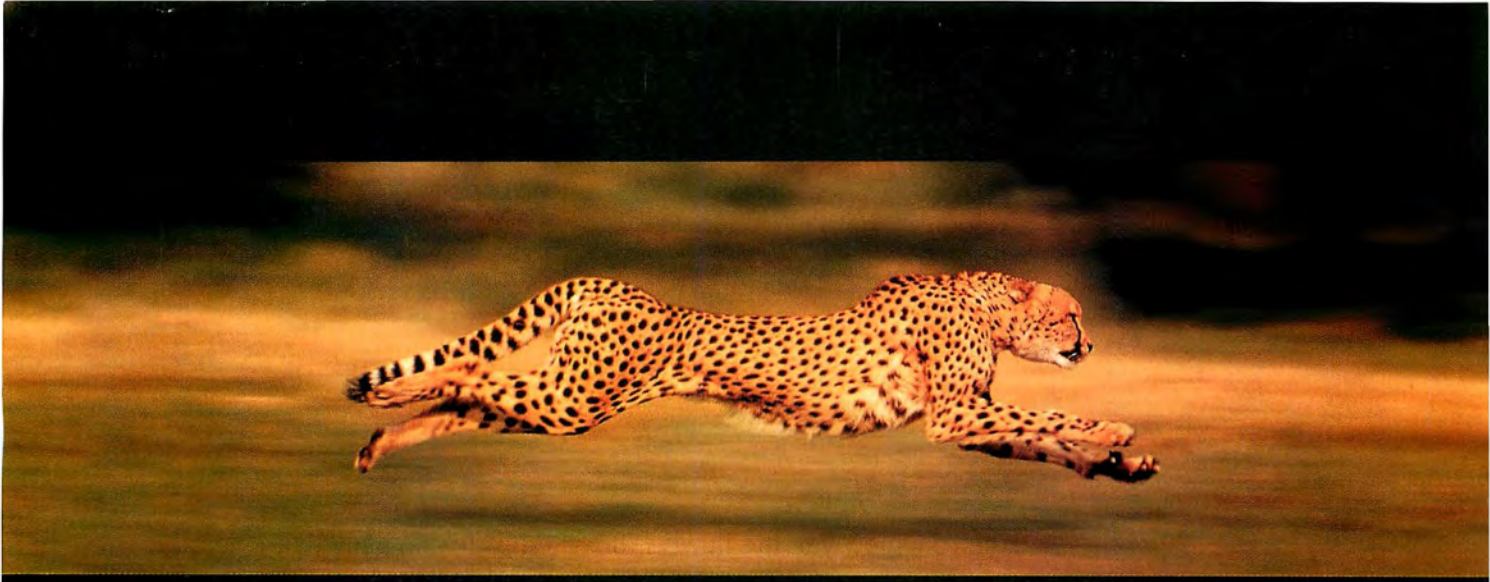
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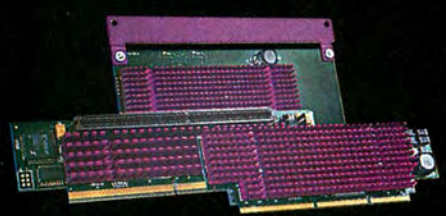
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Secrets

Battle Password Amnesia

HERE'S HOW YOU CAN KEEP TRACK OF ALL YOUR SECRET IDENTITIES

by Joseph Schorr

You've probably experienced password amnesia if you do any Web surfing at all: you return to a Web site you registered at weeks before, only to realize the particular user name and password you created for that site have totally evaporated from memory. Suddenly you can't remember if the password is your dog's name (no, that's my eBay account), your favorite vegetable (nope, used that for Hotmail), or maybe just your birthday (or was it my *wife's* birthday?). After exhausting the 37 different user name and password combinations you've somehow managed to accumulate in your Web travels, you give up and, in desperation, end up creating a *new* registration, adding yet another user name and password to the collection.

And it just keeps getting worse: each week you're hitting more members-only Web sites, signing up for another free e-service, or joining a new online auction. Your list of passwords keeps getting longer. How do you keep track of all this vital information—without compromising your security?

Mac OS 9 makes managing the plethora of passwords much easier—with the Keychain, which allows you to stash multiple user names and passwords in a single, secure, password-protected control panel (see "Meet the Keychain"). But regardless of which OS you're running, there are a few tactics you can use to keep your password-protected data safe and secure—and easily accessible.



STEVEN DANA

Set It, Forget It

Many Web sites offer to remember your user name and password for you by planting a cookie file on your hard disk. A cookie stores all your relevant user information and enters it automatically when you return to a Web site, saving you from having to manually log in. In addition, some browsers, such as Microsoft Internet Explorer, let you save passwords on a site-by-site basis, freeing you from having to remember user names and passwords at all.

These features certainly make life easier, but they also present two huge problems. First, storing such settings on your computer is an obvious security risk. It essentially means that anyone who gains access to your computer can easily log onto Web sites, mount network volumes, and send e-mail—using *your* identity. It defeats the whole point of password protection.

Second, this "set it and forget it" approach almost guarantees that you will, in fact, forget these passwords because you never have to type them. That's all just fine—until you're on the road or at a friend's house and you need to use another

continues

computer, one that doesn't contain your personal cookie files. You may be prompted to enter user names and passwords you've long since forgotten.

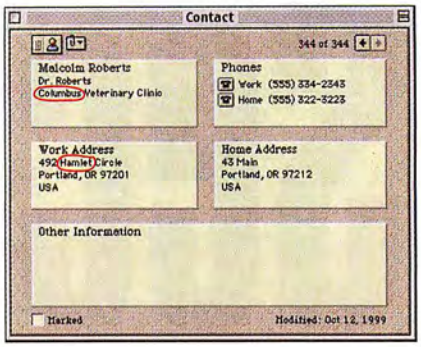
Secret Hiding Places

Security experts say that as a general rule you shouldn't keep unencrypted passwords stored anywhere on your computer. But unless we're talking about issues that involve national security, you can safely keep such information close at hand—as long as you keep it cleverly disguised.

One easy way to do this is to camouflage password information within entries in your contact database, PIM, or address book. I know people who've done this for years, and it works great.

Suppose you register at a Web site about animal care, where your user name is *Columbus* and your password is *Hamlet*. Just fire up your contact database and create an entry for, say, the Columbus Veterinary Clinic. Make the address 492 Hamlet Circle. Give the entry an authentic look by adding phone numbers and other details (see "Contact Camouflage").

Now you have an easy and secure way to look up your password. No one is likely to deduce where you've placed this information, especially if it's in among hundreds of legitimate contacts. At the same time, the info is readily available to you whenever you need it. (And if you synchronize your desktop contacts with those on your Palm, you'll automatically have all your passwords with you on the road, too.) Generally, just seeing a contact entry will be enough to jog your memory and remind you which words constitute your user name and password.



Contact Camouflage You can hide passwords just about anywhere as long as they don't look like passwords. In this example, a password (*Hamlet*) and user name (*Columbus*) are hidden in a Palm Desktop address-book entry.

By the way, the same trick can be used effectively to store other sensitive data, such as bank-account numbers, PINs, and credit-card info. Make up names (Vince Cardiff for your Visa card, for example), and turn account numbers into telephone numbers and expiration dates into addresses. The information is close at hand but never at much risk of being stolen.

The Good Word

Finally, if you're not looking for Pentagon-level security, you can alleviate some password amnesia simply by settling on just a few passwords and user names (or even just one), rather than making up creative new ones every time you sign up for a new e-service. As you've probably heard before, passwords should not be obvious choices like your last name or anniversary date or the name of your pet gerbil. One good approach is to pick a word at random: open a book or dictionary, turn to any page, and point to the first word you see. Make that your universal password. Then you'll have only one word to remember. **m**

JOSEPH SCHORR, a coauthor of *Mac Secrets*, fifth edition (IDG Books Worldwide, 1998), has accumulated more than 40 user names and passwords in the last 12 months, including *Frogman*, *Kukumbuka*, and *Murrv*.

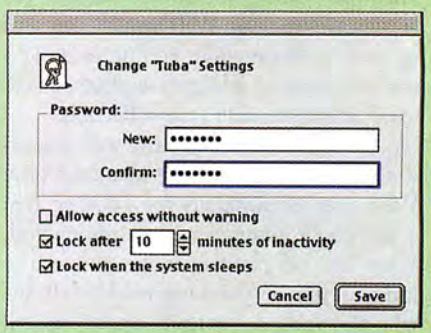
Meet the Keychain

MAC OS 9 DOESN'T COMPLETELY eliminate the problem of managing your numerous user names and passwords, but it does make it much easier, thanks to the Keychain feature. The Keychain is a control panel that allows you to permanently store all the passwords and user names you need for connecting to servers, logging onto Web sites, or opening locked applications (see "Open Sesame"). These password "keys" are stored in a single Keychain file that, in turn, is locked with a master password. You still have to remember a password—but only one.



Open Sesame The Keychain control panel lets you store all your passwords. To see the password for a specific item on the list, select the item, click on the Get Info button, and enter the master password when prompted.

Keychain-aware applications, such as AppleShare, automatically check the Keychain for a password when it's required, so typing in your master password unlocks access to numerous password-protected sites. Even with the Keychain, caution is needed: when your Keychain is unlocked, anyone using your computer can gain access to items requiring your passwords. However, you can configure the Keychain control panel to relock itself after a specified period of inactivity. This option is not on by default, so be sure to activate it (by choosing Settings from the Edit menu in the Keychain control panel) when you first set up your Keychain (see "Lockdown").



Lockdown Set up Mac OS 9's Keychain to automatically relock your passwords whenever your Mac is inactive or asleep.

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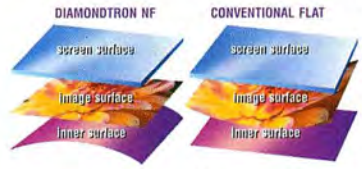
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Tips, Tricks, and Shortcuts

by Lon Poole

People tend to have strong feelings about QuickTime 4's QuickTime Player; some heartily dislike it. For an example of why, take the volume-control thumbwheel. One sweep of the mouse doesn't seem to turn it very far. The trick is to remember that this is a *virtual* thumbwheel. Patrick McClure of Santa Monica, California, discovered that you can click the thumbwheel and drag up (or down) past the point where you no longer seem to be touching the thumbwheel; the volume continues to change until it reaches its maximum (or minimum) setting. You can also change the sound level by clicking and dragging directly in the volume indicator located next to the thumbwheel.

If you prefer using keyboard shortcuts, you can ignore the thumbwheel completely and simply use the up- and down-arrow keys to control the volume, notes Benjamin Drew of Munich, Germany. The new QuickTime Player recognizes many of the keyboard shortcuts from previous versions: the return key and the spacebar both start and pause forward play, the right-arrow key steps forward and the left-arrow key steps backward, and ⌘–right arrow plays forward and ⌘–left arrow plays backward.

Unreadable Rewritable CDs

Q. When I burn a CD-RW disc and put it in my LC 630's internal CD-ROM drive, it doesn't appear on the desktop. Yet the same CD-RW disc mounts fine on a Power Mac 6100, a G3 machine, and an iMac. I've heard that older CD-ROM drives don't have the requisite speed for rewritable media. Since I don't encounter this problem when using CD-R media, I can't see how speed is an issue.

ARVIND UPADHYAY
Bhopal, India

A. The problem is not with the speed of your drive but with the discs. Simply put, CD-RW discs are less reflective than CD-R discs and factory-made CDs. Older CD-ROM drives such as the one in your LC, as well as some older audio-CD players, don't have the necessary circuitry to compensate for this low reflectiveness. Most new CD-ROM drives and audio-CD players can read CD-RW discs, although some CD-ROM drives read them at a reduced speed.



GENE GREIF

Really Big Backup Files

Q. I recently had the "bright idea" to install an inexpensive 18GB hard drive in our company's main Mac file server as backup storage (using Dantz Development's Retrospect) for our network. But after everything was set up, I discovered that even with full compression the Retrospect backup-set file exceeds the 2GB file-size limit for Mac OS 8.6. Is there any way to get around this file-size limit?

WILL PEARCE
Raleigh, North Carolina

A. To create files of this magnitude, you need two things. First, you have to get Mac OS 9, which features the HFS+ disk format and which is the first version of the operating system that provides the programming interface applications need in order to save files larger than 2GB. Second, you need a version of Retrospect that makes use of this programming interface. Unfortunately, the latter does not exit—yet.

You could perform a scheduled Duplicate for each hard drive that you want to back up. To make a complete backup of each hard drive on your network, specify the destination for each drive (or source volume) as a different folder (subvolume) on the 18GB backup hard drive (see "Big Backups"). If you want the backup folder to be an exact duplicate of the source, select the Replace Entire Disk option. In this mode, Retrospect will replace all files that have been changed and delete files that no longer exist on the source. On the other hand, if you want the destination folder to contain all the files that are on the source *plus* any files that were already in the destination folder but were deleted from the source, select the Replace Corresponding Files option instead.

An interesting variation is to specify the same destination on the backup drive for all the networked hard drives and then choose the Replace Corresponding Files option. In this case, the backup drive or folder will contain a superset of the files from all the networked hard drives. For example, you could use this configuration to transfer only new and

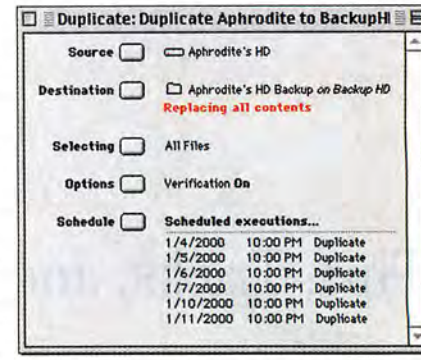
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rerecorded MP3s from several source computers to a master collection on one big destination hard drive.

With any of these configurations, the Duplicate process is incremental. Retrospect simply scans the destination folder and copies only those files that are new or that have changed.

Keep in mind that you shouldn't back up only to a hard drive on your premises. It's important to back up to media that someone moves off-site. Otherwise, the fire (flood, earthquake, hurricane, theft) that destroys the original will also likely destroy the copy.



Big Backups Use Retrospect's Duplicate function to back up more than 2GB of data to another hard drive.

Dragging Background Windows

TIP If you need to move a window that's behind your current window (in the same application), simply hold down the ⌘ key while you drag the title bar of the background window. With this neat little trick, the background window stays in the background, so you don't need to click back and forth between windows.

JAKE SARGENT
San Anselmo, California

Outsmart Word's Autoindent

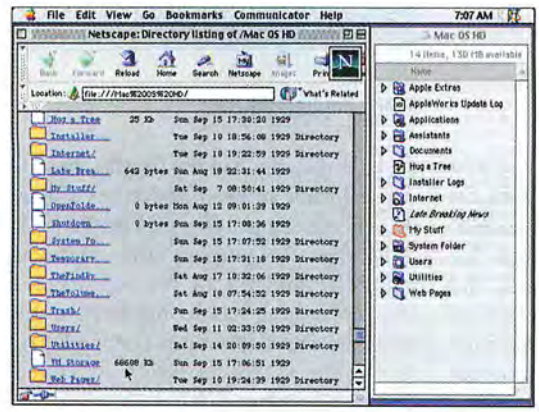
TIP Microsoft Word 98 automatically adjusts an entire paragraph's indentation when you press the tab or the delete key at the beginning of an existing paragraph. This sounds fine but is often annoying in practice—the loss of control over the formatting of paragraphs that follow the magically altered one can be especially troublesome to novices. Word Help says you can turn off all automatic formatting by choosing AutoCorrect from the Tools menu and clearing the check boxes on the AutoFormat As You Type tab of the dialog box. Don't believe it. Instead, you must choose Preferences from the Tools menu and clear the Tabs and Backspace Set Left Indent option on the Edit tab. Now Word will stop trying to outsmart you.

JOHN SCHOENFELDER
Burbank, California

Browse Invisible Items

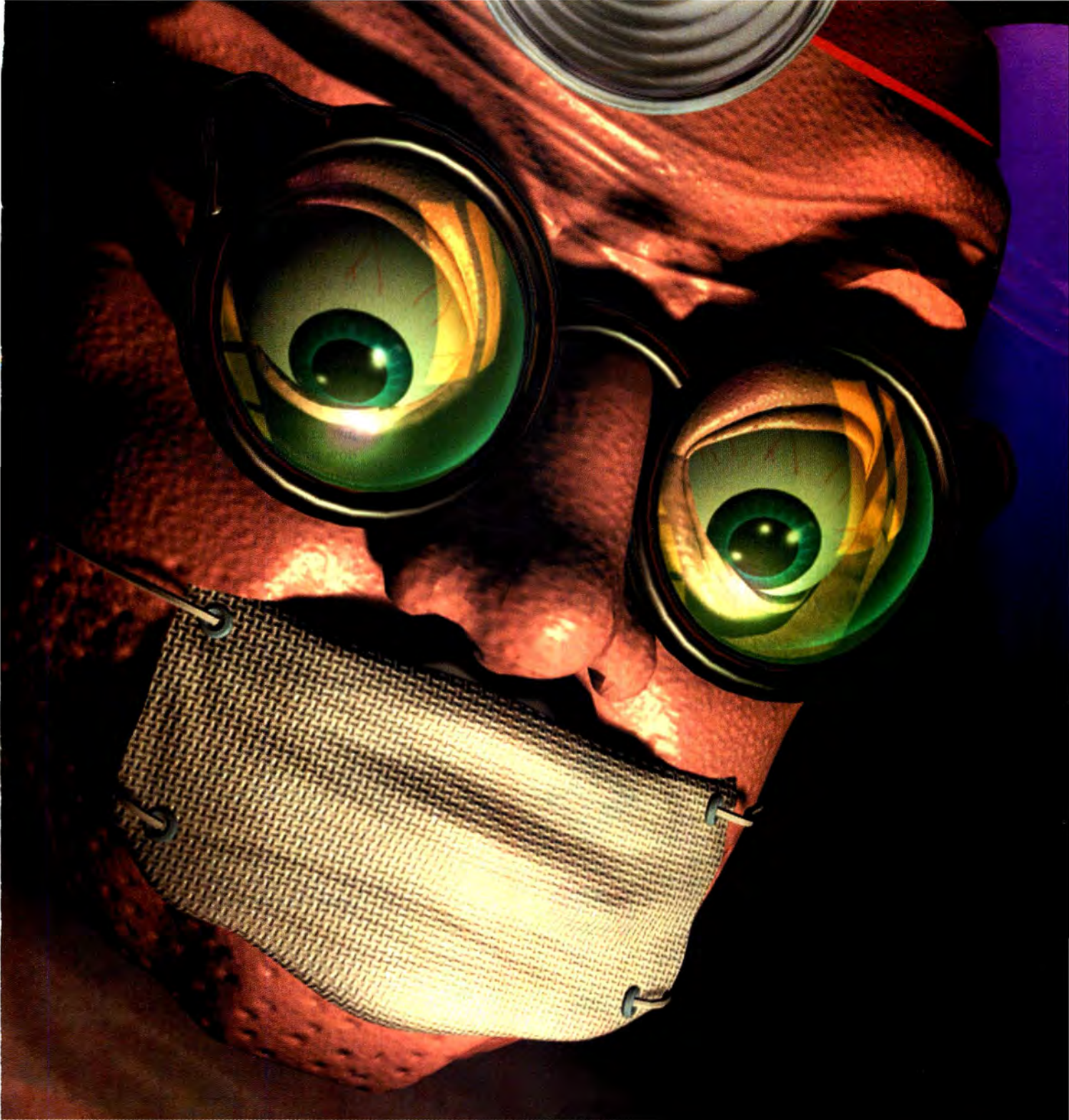
TIP In "Unmask Your Mac's Hidden Problems" (*Secrets*, August 1999), Ted Landau suggested using Sherlock to list invisible files. An easy way to see the invisible files in any folder is simply to drag that folder onto a Netscape Navigator window (see "Decloaking Device"). Navigator will list all of the folder's files and subfolders—including the invisible items. (This does not work with Microsoft Internet Explorer 4.5.) If you see a file that you want to delete, open the invisible file using Apple's free ResEdit program (http://asu.info.apple.com/swupdates.nsf/artnum/n10964) or any of a dozen other file utilities. In ResEdit, choose Get Info For (name of the selected item) from the File menu, and in the dialog box that appears, turn off the Invisible option. Close all ResEdit windows (or quit ResEdit), saving changes when asked. Now you can drag the newly visible file to the Trash.

DOUGLAS S. MEHR
Arnold, Missouri



Decloaking Device You can see the invisible files in a folder or the root level of a disk by dragging the folder or disk icon to a Netscape Navigator window and comparing its list to the Finder's.

continues



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More Shutdown Reminders

If you want to record an audio reminder to play at shutdown, you don't need QuickTime Pro (as suggested in *Quick Tips*, November 1999). Instead, says William H. Clarke of Missoula, Montana, open the Monitors & Sound control panel or the Sound control panel (whichever you have) and select the Alerts menu. Click Add to record a new alert sound. Once you've recorded your reminder and are happy with the message, save it, open the System file (which is inside the System Folder), and drag the sound file you just created from the System file's window to the Shutdown Items folder. Now your message will play whenever someone shuts down the computer.

For a more formal alert, Alan Somers of McKinney, Texas, suggests using the Script Editor to create the following simple AppleScript:

```
display dialog "Turn off the monitor." ¬
buttons "OK" default button "OK" ¬
with icon note giving up after 10
```

The last part of the statement, "giving up after 10," causes the dialog box to go away automatically after ten seconds. If you use Mac OS 8.5 or later, you can change the delay time by entering a different number. You must omit this part altogether in Mac OS 8.1 and earlier.

When you have finished, save your script in the Shutdown Items folder. In the Save dialog box, set the Kind option to Application and turn on the Never Show Startup Screen option. m

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. He is a coauthor, with Todd Stauffer, of the upcoming *Macworld Mac OS 9 Bible* (IDG Books Worldwide) and, with John Rizzo, of *The Little Network Book* (Peachpit Press, 1999).

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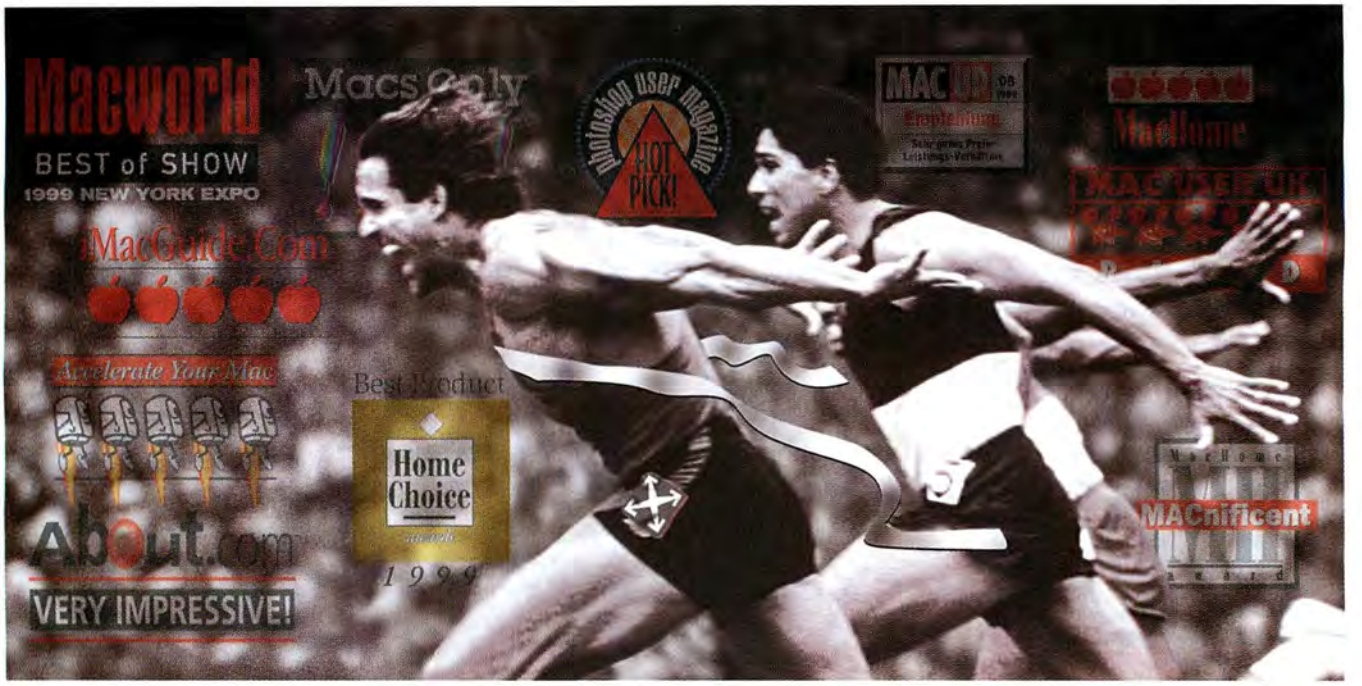
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Building an Index in QuarkXPress 4

A COMPLEX JOB GETS (A LITTLE BIT) SIMPLER

by David Blatner



At first glance, indexing a book seems like the perfect task for computer automation. Just feed your files into the right software application and out pops the perfect index. Right? Unfortunately, it's not so simple. In fact, until recently the only way to get a good index was to create it manually—one entry at a time. Before QuarkXPress 4 came out, books and other documents produced in XPress had to be indexed with a third-party commercial XTension or—the way I did it for years—with hard copies, highlighters, note cards, and colored pens. It was a painful process I wouldn't wish on my worst enemy.

Fortunately, QuarkXPress 4 has an indexing tool that makes the process significantly easier. While XPress still requires that you index one word or phrase at a time (there's no way to instantly locate and identify all the occurrences of a word in your document), it simplifies the process because you don't have to worry about recording each page on which a word appears—in the end XPress collects the page numbers of the items you've selected and builds the final index.

Concordance versus Index

Automated index generators usually don't work well, because a good index tells you not only which words appear in a document but also how to find what you're looking for. This is a key difference.

A list of words that appear in a document is called a concordance. (Virginia Systems' Sonar Bookends—$195 from www.virginiasystems.com—is an excellent tool for building one of these.) A concordance can be just the ticket for some technical manuals and catalogs, but unless you manually strip out certain words, you end up with an index full of words such as *although* and *very*.

When you build an index manually, you can choose to include only those words and phrases that are relevant. Plus, you can (and should) index words and phrases that don't appear in the text but that your readers might look for. For example, because a new XPress user might not know to look for the word *kerning*, the index to a book on QuarkXPress might include *letterspacing* or *spacing letters*, too (even if those exact words don't appear on the actual pages).

Indexing a Book

You might think your copy of QuarkXPress is missing the indexing feature. Fear not: because most XPress users never need to make an index, Quark separated this function into an XTension that, by default, is located in the XTension Disabled folder. So, before you can begin indexing, you have to enable the XTension (select XTensions Manager from the Utilities menu, enable Index, click on OK, and restart QuarkXPress).

Building an index with XPress is easier, faster, and more flexible than indexing on paper, but it's still labor-intensive. The first step is to apply index markers, throughout your document, to the words and phrases you wish to include. XPress doesn't automate the marking process, and you have to flag every instance of a word. You can also insert markers between words, as placeholders for the words or phrases you want to include in the index although they don't appear on the page.

QuarkXPress lets you apply index markers at any point in the production cycle (see "Choosing Your Index"), but

continues

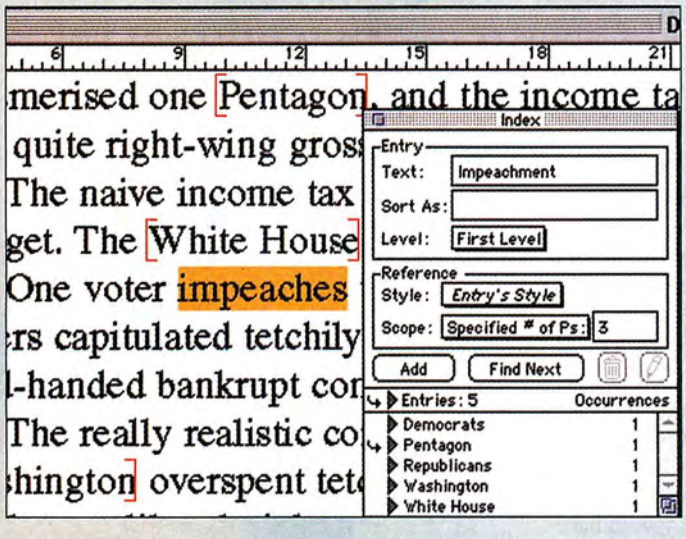
TRISHA KRAUSS

CHOOSING YOUR INDEX

THERE'S LITTLE THAT'S AUTOMATIC ABOUT BUILDING AN index, even in XPress. It's not difficult, but you have to be methodical about it. Here are the basic steps you should follow after opening the Index palette (Edit: Preferences: Index). (There are various additional styling and indexing options along the way. I introduce a couple of them in "Stylin' Indexes.")

1 Place the cursor in the document and type the word or phrase you want indexed in the Text field of the Index palette. Or you can select text on a page, and it automatically appears in this field. (You can press ⌘-option-I to jump to this field instead of clicking in it.)

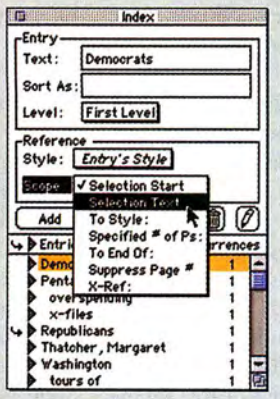
If you've already indexed the word or phrase elsewhere in your document, you can simply scroll to it in the list at the bottom of the palette and click on it. This adds it to the Text field and ensures consistency in your index.



2 Choose a level for your index entry from the Level pop-up menu. *Pentagon*, for example, might be a first-level entry, while *overspending* would fall beneath it as a second-level entry.



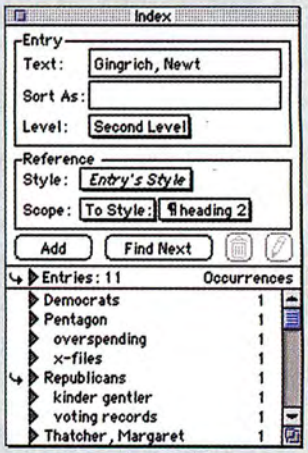
3 Specify what the scope will be from the Scope pop-up menu. Are you indexing just this word on this page, or is this a topic that spans the next six pages? It's easier to set the scope one time using this field than to create a separate index entry on each page. (Instead of a scope, you can choose X-Ref from the same menu to create a cross-reference to some other index entry, such as "GOP. *See* Republicans.")



4 If this is a second-level entry, click in the column to the left of the first-level entry under which the new entry should fall. A little black arrow should appear in the column.

Click on the Add button to add your text to the list of words to be indexed. It's easy to forget this step. Remember: Be methodical. (Shortcut: If the next word or phrase you index has the same palette settings as the last, you can simply select it on the page or type it in the Text field and then press ⌘-option-shift-I to add it to the index list.) First-level entries are alphabetized in the Index palette's list; second-level entries are alphabetized under their respective first-level entries.

When you're finished marking entries, you need to create both a master page for your index and style sheets for each entry level. Then, when you select Build Index, you'll be able to choose the master page and style sheets you've created from the pop-up menus in the Build Index dialog box—otherwise XPress will apply a default master page and default style sheets to your index.



Click on OK, and QuarkXPress builds the index at the end of the current document.

STYLIN' INDEXES

INDEXES COME IN ALL SHAPES AND SIZES, BUT THERE ARE A few rules indexers traditionally follow. For instance, first-level entries are typically capitalized and second-level entries are usually lowercased (except for proper nouns, of course). QuarkXPress won't capitalize entries for you; you have to type them in the Index palette the way you want them to appear (or fix them later when the index is complete). You can adopt other rules, but whatever they are, apply them systematically—an inconsistent index is an ugly sight.

XPress offers some automatic style options, and you can find additional options for styling your index by selecting Index Preferences from the Preferences submenu (under the Edit menu) and in the Build Index dialog box. For example, by default, QuarkXPress places a hyphen between numbers in page ranges: "3-4." I much prefer an en dash (option-hyphen): "3–4." I change this in the Between Page Range field of the Index Preferences dialog box (see below).



Similarly, some people like nested indexes while others prefer run-in indexes. Run-in indexes often take up less room because the second-level entries are listed in running text (instead of a column), but run-in indexes are terrible if you have third- or fourth-level entries. Nested indexes are usually easier to read but should be formatted in narrow columns on the page. You can choose between the two in the Build Index dialog box.

Decimal notation 18, 27
Decimal point 30
Digits of pi
 calculating 18, 34, 41, 46
 memorizing 4, 111–112, 114, 118
 number of 2, 3, 34, 45, 51–53, 65, 67, 87–91, 113
 random sequence of 68, 72–73
 search for 42–43, 51
Dinostratos 56, 90
Dudley, Underwood 93, 96
Duciad (Pope) 92

Nested Index

Decimal notation 18, 27
Decimal point 30
Digits of pi; calculating 18, 34, 41, 46; memorizing 4, 111–112, 114, 118; number of 2, 3, 34, 45, 51–53, 65, 67, 87–91, 113; random sequence of 68, 72–73; search for 42–43, 51
Dinostratos 56, 90
Dudley, Underwood 93, 96
Duciad (Pope) 92

Run-in Index

it's almost always best to wait until the text has become fixed—until nothing in the document will be deleted, copied, cut, pasted, and so on—because as you edit the text, you may accidentally delete index markers without knowing it.

When you've applied all the markers, the next step is to set up the index preferences to reflect the style of index you want (see "Stylin' Indexes"). Finally comes the part you've been waiting for: you click on a button, and XPress builds the index using the entries you've supplied. While applying markers on screen is faster than writing on note cards, it's this last step that really saves the most time and makes professional indexers smile.

Worth the While

Creating an index can be an intimidating task, even with XPress's tools. But don't let that stop you; a book or a manual without an index is hardly worth the paper it's printed on. Take the time to build a good, solid index now, and your readers will thank you for years to come. **m**

DAVID BLATNER is the author of *The QuarkXPress 4 Book* (Peachpit Press, 1998) and a frequent speaker on desktop publishing at Seybold and other events. You can find him at david@moo.com.

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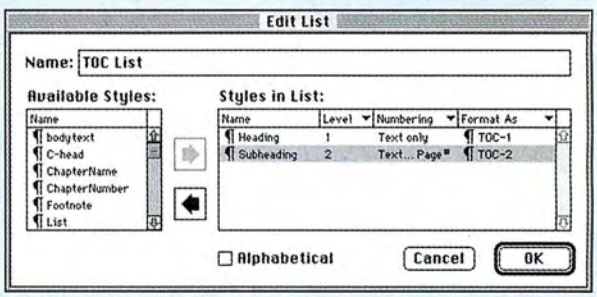
BUILDING A TABLE OF CONTENTS

ALTHOUGH BUILDING AN INDEX IN QUARKXPRESS is a meticulous process, making a table of contents (TOC) is much simpler. XPress lets you make a TOC with its Lists feature (Edit: Lists), which, appearances to the contrary, is very straightforward. There are three steps: telling XPress which headings to capture, specifying what each heading should look like in the final TOC, and building the TOC with the Lists palette. Creating a TOC with the Lists feature relies entirely on your having used style sheets throughout your document. You should create and apply the same uniquely named style to all your headings, subheads, and so on. You also have to define a style sheet for each level in your TOC. For instance, all the headings might appear in 14-point Helvetica Bold, so make a paragraph style with this definition called TOC-1 or some other descriptive name. You don't need to apply these styles anywhere; XPress will apply them automatically when it builds the TOC.

1 Select Lists, click on the New button to define a new list, and give the list a name.

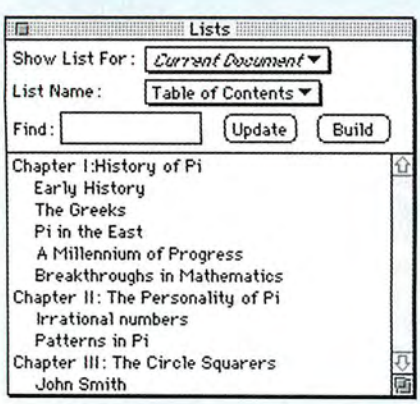


2 Choose which styles you want in your TOC by double-clicking on them in the Available Styles list. You can assign a level to each style, but it will affect only how the list appears on screen in the Lists palette, not how it will appear on your pages.

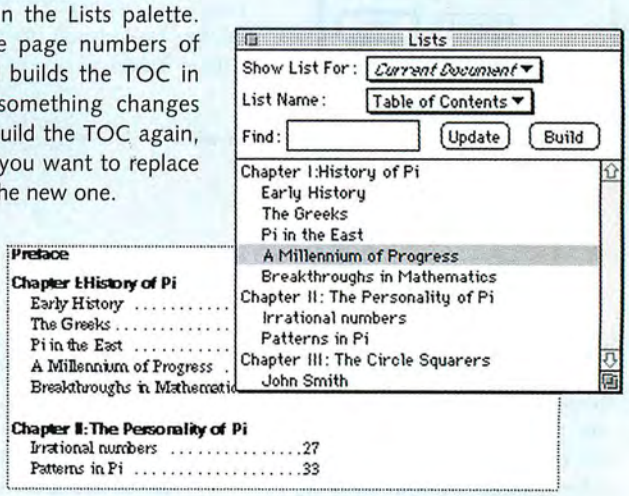


If you want your TOC entries to appear with a page number (you typically would), select a style and choose Text...Page# from the Numbering pop-up menu. Finally, choose the appropriate TOC style sheet from the Format As pop-up menu. For instance, you might apply the TOC-1 style to all the first-level TOC entries, and TOC-2 to the second-level entries.

3 After you've saved your new list, open the Lists palette (select Show Lists from the View menu). The palette displays your headings but leaves out the page numbers. Note that you can have more than one list in a document—for instance, a list of figures, a list of tables, and a list of footnotes.



4 Create a new text box and click on the Build button in the Lists palette. XPress collects the page numbers of each heading and builds the TOC in the text box. If something changes and you need to build the TOC again, XPress asks you if you want to replace the old TOC with the new one.



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3-D and Photoshop: A Dynamic Duo

THE SHORTCUT TO ADDING IMPACT TO 3-D IMAGES

by Cathy Abes

Three-dimensional imagery is so appealing because, when it's done imaginatively, it can seductively pull you into the depths of its fabricated world. But far too many illustrations fall short of that ideal. One of the reasons, says San Francisco–based digital illustrator Nick Fain, is that 3-D programs typically don't allow for much customization of colors and textures. As a result, an image rendered in a 3-D program tends to look flat, dull, and unrealistic.

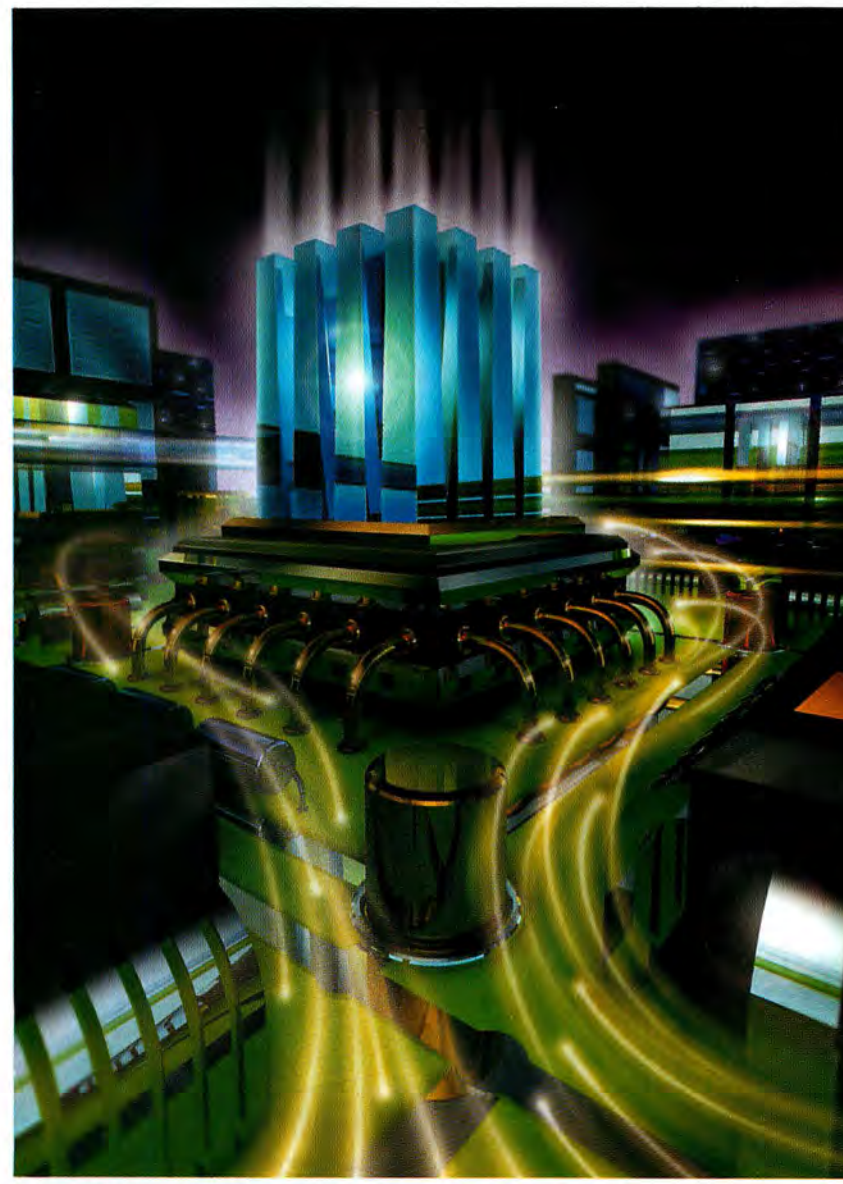
That's where Adobe Photoshop comes in. Exploiting its arsenal of color-enhancement tools and filter effects, Fain can quickly create natural-looking texture maps for his 3-D models. Doing the work would be much more time-consuming and difficult with a 3-D program alone.

For this illustration, which appeared in *Publish* magazine, Fain created a circuit board that resembled a cityscape. In Byte by Byte's Sculpt 3D, he built a relatively simple model and ray-traced it.

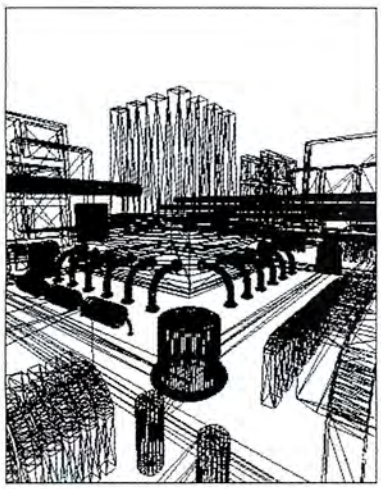
For highly detailed print images such as this one, Fain prefers to add shadows and atmospheric effects—such as fog, smoke, and glowing lights—in Photoshop. It not only gives him better control and quality than a 3-D program but also lets him create and modify such effects much more easily. For instance, he can alter an element without having to rerender the entire image.

Fain created this image on his Power Mac G3 with Photoshop 5.5 and Sculpt 3D, although he could have built the model with virtually any 3-D program. m

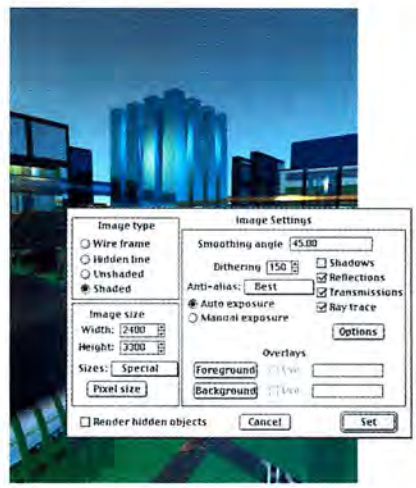
CATHY ABES, author of *Photoshop F/X* (Ventana Press, 1994) and most recently a senior editor at *Publish*, has been writing about graphics and publishing for more than ten years.



A Dose of Realism By adding realistic-looking special effects in Photoshop, artist Nick Fain is able to transform simple 3-D models into dynamic illustrations. He applied his technique in this artwork to make a circuit board look like a futuristic cityscape.



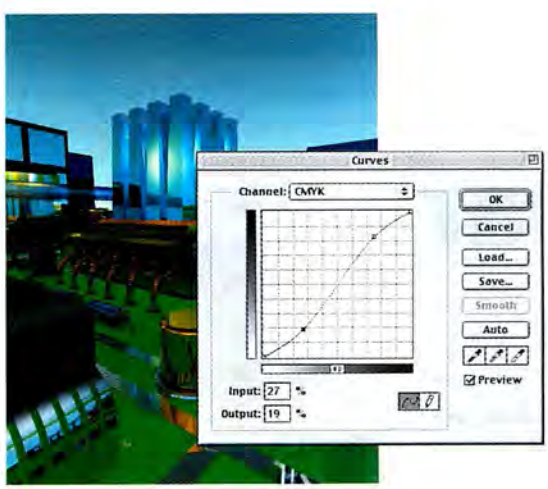
1 In Sculpt 3D, Fain used relatively simple geometric shapes to build a model of the circuit board, shown here in wire-frame mode. Using a wide-angle lens, he positioned the program's camera to view the scene from a dynamic three-point perspective.



2 To achieve a photo-realistic look, he ray-traced the image in Sculpt 3D, with the highest-quality settings and with shadows turned off. Fain typically renders 3-D images without shadows, which reduces rendering time. More important, he can easily create the shadows in Photoshop, a program that provides better controls and produces superior results.



3 He created an alpha mask in Sculpt 3D in order to separate key elements in the image—such as the CPU in the center and the cylindrical-shaped capacitor—from the background. Then he imported the mask into Photoshop and worked on the elements individually.



4 To punch up the colors and sharpen the contrast throughout the image, Fain made adjustments with Photoshop's Curves command, increasing the saturation, lightening the midtones and highlights, and increasing the density of the shadows.



5 Finally, he added the glowing comet tails swirling around the CPU. Each of the tails consists of a yellow tail, a white tail, and a white hot spot (the last two residing on the same layer). Using Photoshop's airbrush tool, Fain made two stroked paths (a long, soft stroke for the yellow tail and a shorter, thinner one for the white tail) and added a glow for the hot spot at the beginning of the tail by clicking once or twice with the airbrush tool. He used a 35-pixel brush for the yellow tail, a 25-pixel brush for the white tail, and a 65-pixel brush for the hot spot.



Canhead, created with MetaCreations Painter™ by artist **Ryan Wood** ©1999

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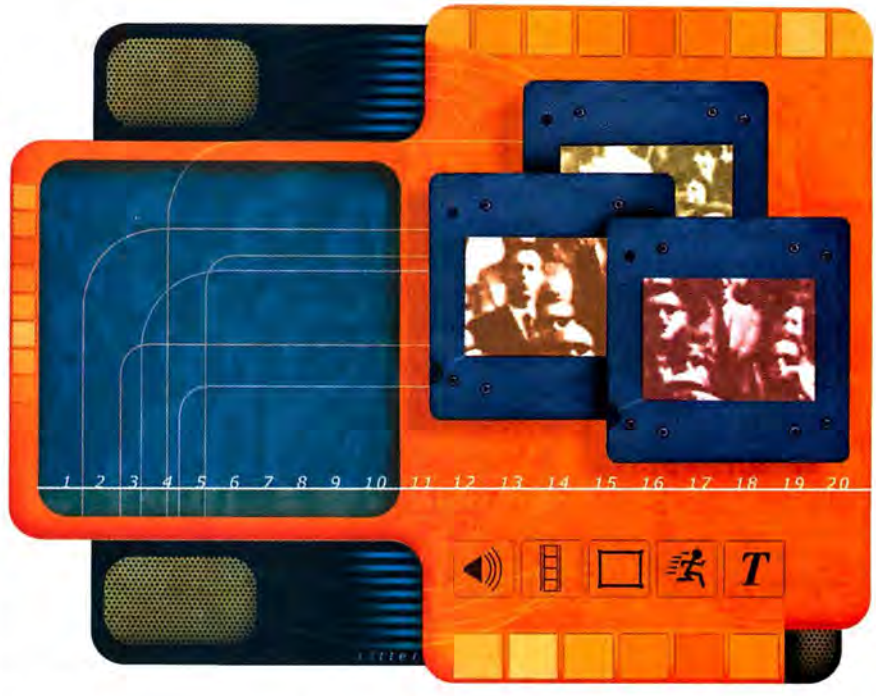
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SMIL: Markup for Multimedia

CREATE BANDWIDTH-FRIENDLY STREAMING MULTIMEDIA

by Jim Heid



JOHN RITTER

The Web's HyperText Markup Language has a lousy sense of timing. In fact, HTML has no sense of time at all—unless you resort to migraine-inducing chunks of JavaScript code, you can't create pages in which elements appear or disappear at specific times. Too bad, because time is a cornerstone of multimedia. Look at video and multimedia authoring programs: they're built around timeline-based windows that show a project in successive stages.

Two relatively new markup languages go beyond HTML by supporting not only *spatial* markup (control over where things appear) but also *temporal* markup (control over *when* they appear). One language is called HTML+Time, and currently only version 5 of Microsoft Internet Explorer for Windows supports it—therefore it is of limited value to Web designers who want to reach the millions of surfers using different or older browsers.

The other time-based markup language is called SMIL (pronounced *smile*), short for Synchronized Multimedia Integration Language. SMIL is supported on tens of millions of computers right now, thanks largely to RealNetwork's (www.real.com) RealSystem G2 streaming platform. The RealPlayer G2 family understands SMIL, and SMIL-based interactive projects can play back within the G2 player window or directly within a Web page via the G2 browser plug-in. At press time, Apple announced that QuickTime 4.1, due early in 2000, will support SMIL. Details are sketchy as to what SMIL features QuickTime will support, but it's good news that the language will be expanding beyond the RealSystem G2 streaming platform.

SMIL's approach to integrating media has some big benefits for Web developers. Interactive training courses, Internet-radio jukeboxes, narrated slide shows—SMIL is ideal for these and a host of other tasks. In "Presenting with SMIL" I show you a simple SMIL project and take a look at how SMIL works in the RealSystem G2 platform.

WHAT YOU NEED

A text editor, such as Microsoft Word or the Mac OS's SimpleText

RealPlayer G2

A RealSystem G2 server

A compression utility, such as Terran Interactive's Media Cleaner Pro 4 (www.terran.com)

Advantages to Smile About

Several elements work together to give SMIL its capabilities.

Multiple Media As the name *Synchronized Multimedia Integration Language* indicates, SMIL presentations can marry multiple media—in RealSystem G2's case, audio, video, still images, text, and Macromedia Flash animations.

Note that the SMIL file itself doesn't contain these media. Just as an HTML file doesn't contain graphics but instead uses tags to refer to them, a SMIL file merely references content that you've already created using the RealSystem applications.

Interactivity Any of the above elements can also contain hyperlinks. Make a still image a hyperlink, for example, and a user can click on it to go to a Web page, to a different portion of

continues

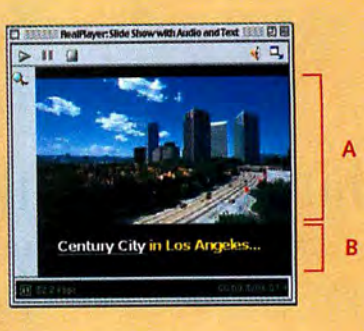
Presenting with SMIL







I CREATED A SIMPLE PROJECT that illustrates some of SMIL's key capabilities. The project comprises some stock photographs downloaded from the Web and delivered as RealPix images, accompanying RealText captions containing hyperlinks, and a RealAudio soundtrack.



The Layout

The head portion of a SMIL file contains a <layout> section that defines the project's overall playback size and specifies the names and dimensions of the RealPix region (A) and the RealText region (B).

```
<layout>
<root-layout width="320" height="290" />
<region id="pix_region" width="320"
height="240" left="0" top="0" />
<region id="text_region" width="320"
height="50" left="0" top="240" />
</layout>
```

the SMIL project, or to a different SMIL project.

Bandwidth-Friendly Visual Effects You can add any of several different transition effects between still images. Because RealPlayer G2 renders these effects at playback time, they don't increase the download burden by a single byte. Adding fades, dissolves, wipes, and other eye candy can spice up an otherwise static set of images. And because you're working with still images, these slide shows don't have the traditionally tiny, jerky look of streaming video.

Text-Based Flexibility Because SMIL is a markup language, its marriage of media happens through simple, HTML-like text tags. This not only makes SMIL relatively easy to learn but also opens the door to some extremely powerful applications. With a CGI script or other back-end software, you can generate SMIL files on the fly and thus tailor a presentation to specific conditions. Play different content depending on the time of day. Play different sections of an online training course depending on how well a user is progressing. Display real-time news or weather data retrieved from a distant server. Multimedia technologies that rely on binary files don't allow for this flexibility.

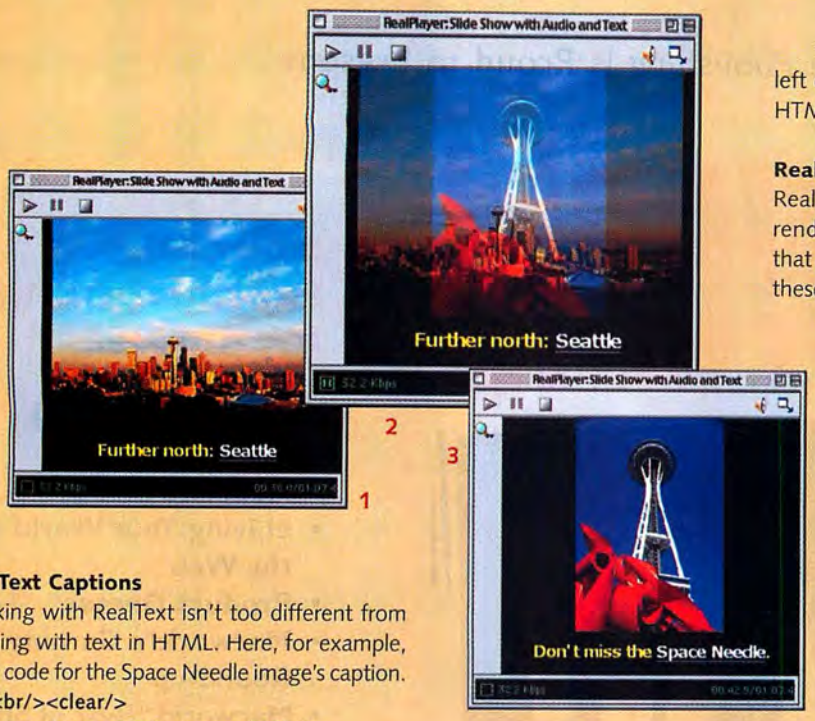
Writing SMIL

Because SMIL files are just text files, you can create them using any text editor, from the Mac OS's SimpleText to Bare Bones' BBEdit to Microsoft Word. As you can see in "Presenting with SMIL," SMIL looks a lot like HTML—if you know HTML, you have a considerable head start in learning SMIL.

Today's Web designers can choose between typing tags by hand and using a WYSIWYG editor such as Adobe GoLive or Macromedia Dreamweaver (see "Wake Up Your Web Sites," in this issue). Alas, SMIL authors aren't as lucky—there are no SMIL layout tools for the Mac yet. Macromedia does offer a free RealSystem G2 layout extension for Dreamweaver (www.dreamweaver.com), but it's limited primarily to inserting RealSystem G2 content into Web pages.

The picture is only a little brighter in Windows. The few available SMIL authoring programs are awkward, lacking the elegance of such tools as Macromedia Flash. RealNetworks offers two terrific but basic SMIL tools: the free RealSlideshow and the $29 RealSlideshow Plus. Both enable you to drag images into a timeline window and synchronize them with RealAudio sound tracks. RealSlideshow Plus adds support for RealText text captions and includes numerous design templates to give you a head start.

RealNetworks isn't planning Mac versions of either RealSlideshow program, but you can run both on your Mac using Connectix's Virtual PC 3.0 ($179; www.connectix.com). They ran without a hitch in my informal tests. Ever eager to push the envelope, I also tried running RealServer G2 under Virtual PC. Alas, the envelope ripped. I was able to run the server and access it locally (that is, from RealPlayer G2, also running under Virtual PC), but I couldn't access it over the Internet. Still, the ability to access RealServer G2 locally could be useful for testing SMIL presentations.



RealText Captions

Working with RealText isn't too different from working with text in HTML. Here, for example, is the code for the Space Needle image's caption.

```
<br/><clear/>
<time begin="42"><pos x="15" />
<pos y="18"/>
Don't miss the <a href="http://www
.seattlecenter.com/">Space Needle</a>
```

The code begins by clearing the previous caption from the RealText area. Then it displays the new caption 15 pixels from the text region's left edge and 18 pixels from its top edge. An HTML-like **<a>** tag creates the hypertext link.

RealPix Effects

RealPix allows for bandwidth-friendly effects rendered by RealPlayer G2. Here's the code that produces the cross-fade effect illustrated in these three images.

```
<crossfade start="41"
duration="1"
target="8" />
```

The cross-fade starts 41 seconds from the beginning of the presentation; most time-oriented SMIL tags specify their values in this way. The cross-fade's duration is one second. Each image in a RealPix presentation is assigned a number; in this case, the target of the cross-fade—the image to which the first image is fading—is number 8.

Advanced SMILing

I'VE ONLY SCRATCHED the surface of SMIL's talents in this article. Here are some of the language's more advanced capabilities.

Panning and Zooming You can add a sense of motion to a series of static RealPix images by panning across images or zooming in and out. Simply make the image larger than the RealPix region, and then use the **<viewchange>** tag to pan or zoom.

Bandwidth and Language Switching SMIL's **<switch>** tag lets you tailor a presentation to specific languages and connection speeds. You can provide both a Spanish and an English soundtrack, for instance, and use a **<switch>** tag to play the appropriate one based on settings a user has made in RealPlayer G2's Preferences window. Similarly, you can use **<switch>** to provide different types of content depending on a user's connection speed: still images for a modem user and motion video for a DSL user.

Serving SMIL

If you're up-to-date on streaming media, you know that you can deliver RealAudio or RealVideo files in two ways: with proprietary RealNetworks server software or with the same HTTP server that dishes out your Web pages (see "Watch This: Streaming Video on Your Web Site," *Create*, April 1998). The HTTP route has the advantage of not requiring you to buy and run another piece of server software, and you *can* serve some simple SMIL presentations using HTTP. The results aren't too hot, though—presentations can take a long time to buffer before playback begins, for example, and media elements can fall out of synchronization. And sophisticated SMIL projects simply don't work at all over HTTP.

For more reliable results, you can take the G2-server plunge: download and use the free, 20-stream Basic Server if yours is a small-traffic site; plunk down $695 for a 40-stream server; or break the bank and pay five figures for a high-capacity server. A smart alternative is to contract with a service provider who offers G2-hosting services. You'll find a database of these providers at http://partners.real.com/powersearch.html.

More Smiles Ahead

SMIL's future looks bright. This year is likely to bring professional-level authoring tools for the Mac OS and Windows alike. And a new version of the SMIL standard, called SMIL Boston (so named because the standards meeting was held in Beantown), promises better animation and a degree of support for interactive television.

Even if you're using another streaming technology for Web multimedia, it's worth your while to look into SMIL. Its tag-oriented approach to time-based presentations is a harbinger of what we may see in future versions of HTML—versions that know how to tell time. **m**

A contributor to *Macworld* since 1984, JIM HEID (www.heidsite.com) writes and teaches on all facets of Web streaming and multimedia.

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Item #CPU1463

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Apple iMac DV Special Edition



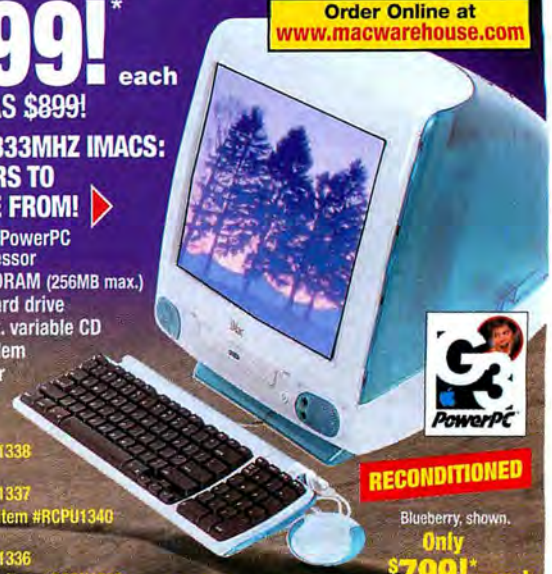
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Only $599!*

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iomega

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EPSON



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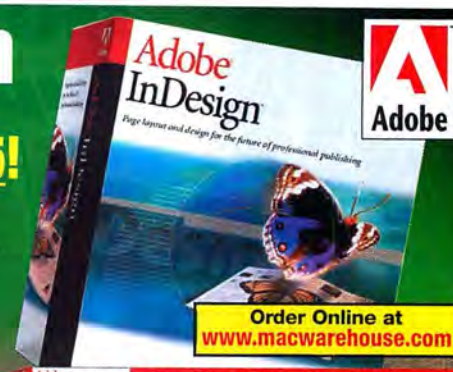
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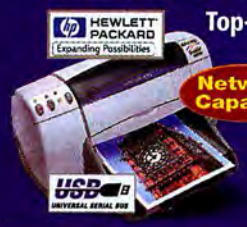


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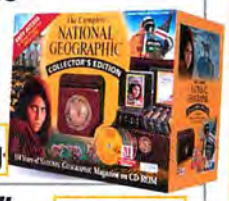
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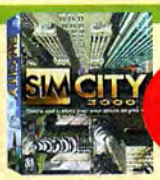
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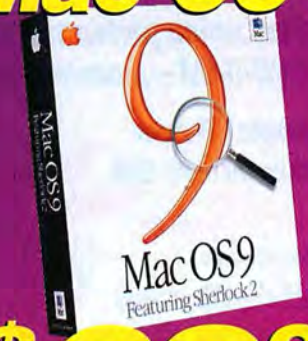


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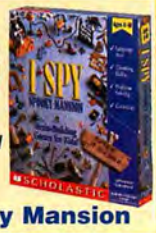


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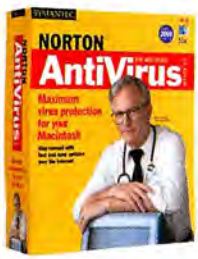
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EDITORS' CHOICE March '98

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10000rpm 2048k buffer 5.5ms Seek

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$39

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Stomp CD Labeler



$279

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$124*

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$219.99

ViewSonic E771

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$670

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NetBarrier

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Epson 740i

color inkjet

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2.1gb of removable storage

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Upgrade Cards: G3/G4	
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Sonnet Crescendo starting at	$232.00
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Magic Yamaha CDRW 8/4/24 SCSI	$309.99
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Magic Teac CDR 8/24 SCSI	$375.99
Smart CDR/CDRW Media$1.49/	$2.79

FireWire Mania:	
OrangeMicro HotLink Firewire	$119.99
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Orangelink Firewire PC Card	$139.99
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Quantum AtlasIV 36gb Ultra2 7200rpm	$929.99
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$899

Nikon Coolpix 950

digital camera



$59.99*

Microtek Slimscan C6

USB duo scanner

*after rebate



$879

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megapixel digital camera



$186

ATI VR PCI

$135 ATI Orion 16mb PCI

$219 ATI Nexus 32mb PCI



$939

Sony 520GS 21"

color monitor

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6x24 Teac mechanism, tray load, 2MB buffer	*$299*	*n/a*
8x20 Sanyo mechanism, tray load, 2MB buffer	*$279*	*$369*
8x20 Plextor mechanism, tray load, **4MB** buffer	*$359*	*$449*
8x24 Teac mechanism, tray load, 2MB buffer	*$329*	*$419*
CD REWRITABLE *Includes 5 Free ReWritable Disks!*		
6x4x16 YAMAHA mechanism, SCSI, tray load, 2MB buffer	*$189*	*$249*
4x2x20 Plextor mechanism, tray load, 2MB buffer, SCSI	*$289*	*$339*
6x4x24 Ricoh mechanism, tray load, 2MB buffer, SCSI	*$239*	*$299*
8x2x20 Sanyo mechanism, tray load, 2MB buffer, SCSI	*$319*	*$369*
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USB PRODUCTS

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USB Case for IDE hard drive (USBCASE)	$89
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G3 UPGRADES



Upgrades for the new G3 Mini Tower Macintosh computers.

Adaptec PCI SCSI card (A2906E)	$65
20GB Hard Drive (M92040D)	$201

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External (YAM8X4X24SX) $469

Also available with PCI Controllers - Call

InkJet CD Color Printer (CDPRINTER3)	$1129
Adaptec Ultra Wide PCI controller (A2940MUW)	$275
Adaptec Ultra-2 PCI controller (A2940MU2W)	$379
Pioneer Bare SCSI 32X DVD ROM (DVD303)	$140

DVD RAM

Toshiba SCSI DVD RAM drive (SDW1111)	$429
Panasonic SCSI DVD RAM drive (LFD103U)	$539
Creative SCSI-2 DVD RAM drive (CLDVDRAM)	$539
DVD RAM 5.2GB media (DVDRAMDISK)	$39

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Enclosure holds 3 Hot Swappable SCA drives
$259 (SCA3DR-LVD) INTERNAL
$329 (SCA3CSE-LVD) EXTERNAL

HARD DRIVES

Quantum

ULTRA 160/m SCSI New SCSI interface will transfer 160MB/sec on new controllers. Drives will work on older SCSI, Ultra Wide, Ultra-2 controllers.

9.1GB	7200	2MB	KN309100LW	$279
9.1GB	10,000	2MB	TN309100LW	$399
18.2GB	7200	2MB	KN318200LW	$479
18.2GB	10,000	2MB	TN318200LW	$645
36.4GB	7200	2MB	KN336400LW	$849
36.4GB	10,000	2MB	TN336400LW	$1079

IDE Ultra ATA/66

4.3GB	512K	5400	QML04300LA	$105
8.4GB	512K	5400	QML08400LA	$120
13.0GB	512K	5400	QML13000LA	$137
13.6GB	512K	5400	KX313600A	$169
17.3GB	512K	5400	QML17300LA	$169
20.5GB	512K	7200	KX320500A	$229
26.0GB	512K	5400	QML26000LA	$279
27.3GB	512K	7200	KX327300A	$299

IBM

ULTRA SCSI

9.1GB	7200	2MB	IBM309170N	$250
18.2GB	7200	2MB	IBM318350N	$475

ULTRA WIDE SCSI

9.1GB	7200	2MB	IBM309170W	$250
18.2GB	7200	2MB	IBM318350W	$475

ULTRA-2 SCSI

9.1GB	7200	2MB	IBM309170U2	$250
9.1GB	10,000	2MB	IDMVS9U2	$389
18.2GB	7200	2MB	IBM318350U2	$475
18.2GB	10,000	2MB	IDMVS18U2	$675
36.4GB	10,000	2MB	IDMVS36U2	$1025

Call about the new 72GB drive - coming soon!

IDE & IDE Ultra ATA/66

9.1GB	7200	2MB	IBM9GXP	$125
13.5GB	2MB	512K	IBM13GXP	$145
10.0GB	7200	2MB	IBM20GXP	$235
20.3GB	5400	2MB	IBM20GP	$195
22.0GB	7200	2MB	IBM22GXP	$245
25.0GB	5400	2MB	IBM25GP	$235
27.3GB	7200	2MB	IBM27GXP	$255
34.2GB	7200	2MB	IBM34GXP	$345
37.5GB	5400	2MB	IBM37GP	$345

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IDE Ultra ATA/66

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13.0GB	5400	512K	WDAC136AA	$148
13.6GB	7200	2MB	WDAC136BA	$155
17.2GB	5400	512K	WDAC172AA	$194
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20.5GB	7200	2MB	WDAC205BA	$248
27.3GB	7200	2MB	WDAC273BA	$279

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HARD DRIVES

Seagate

ULTRA SCSI

4.5GB	7200	512K	ST34520N	$190
9.1GB	7200	512K	ST39140N	$293

ULTRA-2 SCSI

9.1GB	7200	1MB	ST39175LW	$317 WOW
9.1GB	10,000	1MB	ST39103LW	$431
9.1GB	10,000	4MB	ST39103LW4	$455
18.2GB	7200	1MB	ST318275LW	$510
18.2GB	10,000	1MB	ST318203LW	$699
18.2GB	10,000	4MB	ST318203LW4	$729
36.4GB	7200	1MB	ST136475LW	$919
36.4GB	10,000	1MB	ST136403LW	$1119
50.1GB	7200	1MB	ST150176LW	$949

IDE Ultra ATA/66

4.3GB	5400	256K	ST34311A	$95
6.4GB	5400	256K	ST36421A	$105
8.6GB	5400	256K	ST38421A	$116
10.2GB	5400	512K	ST310232A	$129
13.3GB	5400	512K	ST313032A	$135
17.2GB	5400	512K	ST317242A	$153
20.4GB	7200	512K	ST320430A	$209
28.0GB	7200	512K	ST328040A	$269

Maxtor

IDE Ultra ATA/66

8.7GB	5400	512K	M90871U2	$112
13.6GB	5400	512K	M91301U3	$129
13.6GB	7200	2MB	M91369U3	$150
17.3GB	5400	2MB	M91737U2	$160
17.4GB	5400	512K	M91741U4	$150
36.5GB	5400	2MB	M93652U8	$315

2.5" IDE LAPTOP

4.3GB	8.45mm	Toshiba	MK4313MAT	$159
6.4GB	8.45mm	Toshiba	MK6411MAT	$199
10GB	12.5mm	Toshiba	MK1011GAV	$310
12.1GB	9.5mm	Toshiba	MK1214GAP	$Call
18.1GB	12.5mm	Toshiba	MK1814GAV	$Call
6.0GB	9mm	IBM	DA206000	$235
9.0GB	9mm	IBM	DA209000	$345
12.0GB	9mm	IBM	DA212000	$379
15.0GB	12mm	IBM	DA215000	$535
18.0GB	12mm	IBM	DA218000	$555
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Teac	CD532S	32X	85ms	$87
Plextor	PX32TS (tray)	32X	85ms	$95
Plextor	PX32CS (caddy)	32X	85ms	$145
NEC	CDR3010	40X	85ms	$79
Toshiba	XM6401B	40X	85ms	$87
Plextor	PX40TS	40X	85ms	$105
Kenwood	UCR415	52X	90ms	$169
• WIDE SCSI •				
Plextor	PX40TSUW	40X	85ms	$120
• IDE •				
Teac	CD532E	32X	85ms	$50
NEC	CDR3000	40X	75ms	$55
Toshiba	XM6702B	48X	85ms	$59
Mitsumi	CRMCFX48X	48X	65ms	$55
Creative	SBCD52	52X	100ms	$59
Kenwood	UCR412	52X	90ms	$98
• CD CHANGER •				
Pioneer 24 X6 Disc Ext. SCSI (DRM6324X)				$395

TAPE BACKUP

Capacity	Native-Compressed	Max. Speed	Back Up Be Y2K Safe!
• 4mm DAT •			
2-4GB	66MB/min	Seagate STD24000N	$429
4-8GB	66MB/min	Seagate DDS-2 STD28000N	$535
4-8GB	90MB/min	Sony SDT7000AI	$519
4-8GB	88MB/min	HP C1599AI	$569
12-24GB	144MB/min	Sony DDS-3 SDT9000AI	$679
12-24GB	132MB/min	Seagate STD224000N	$699
12-24GB	120MB/min	HP DDS-3 C1554AI	$729
20-40GB	288MB/min	Sony DDS-4 SDT10000AI	$1029
30-70GB	360MB/min	Seagate STA2701W	$1939
48-96GB	48MB/min	Seagate STL496000N	$2159
72-144GB	120MB/min	HP 6 tape load C5648A	$1999
• EXABYTE 8mm DAT •			
7-14GB	120MB/min	ELIANT820	$1299
20-40GB	360MB/min	EXB8900	$2119
70-140GB	60MB/min	EXB10H External	$2539
• QUANTUM DLT •			
20-40GB	180MB/min	DLT4000	$1649
35-70GB	600MB/min	DLT7000	$4375
40-80GB	600MB/min	DLT8000	$4599

REMOVABLE MEDIA

Iomega	
100MB Zip Ext SCSI	$109
2GB Jaz Internal SCSI	$309
2GB Jaz External SCSI	$315
1GB Jaz disk 2-4/5-9/10+	$80/77/75
2GB Jaz disk 2-4/5-9/10+	$85/80/77
Maxoptix Magneto Optical	
5.2GB SCSI-2 Int. 4MB buffer(T6-S200)	$1459
Sony Magneto Optical	
5.2GB SCSI-2 Int. 4MB buffer(SMOFS51)	$1439

MEDIA

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20 Pack [CDR74-20]	8x	$30
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50 Pack [CDR74W-50]	4x	$239
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Budget 100 Pack [CDR74PB-100]	4x	$109
5 Pack [CDR74P-5]	8x	$15
20 Pack [CDR74P-20]	8x	$59
50 Pack [CDR74P-50]	8x	$99
100 Pack [CDR74P-100]	8x	$189
• CD RECORDABLE PLATINUM MEDIA •		
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20 Pack [CDR74PA-20]	8x	$43
50 Pack [CDR74PA-50]	8x	$75
100 Pack [CDR74PA-100]	8x	$139

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230MB, 3.5", 512K	$14	$10	$8
640MB, 3.5", 2048K	$21	$17	$15
1.2Gig, 5.25", 512K	$25	$23	$21
1.3Gig, 5.25", 1024K	$26	$24	$22
2.6Gig, 5.25", 1024K	$33	$29	$27
5.2Gig, 5.25", 2048K	$70	$68	$64

• BACKUP TAPES •

	2-4	5-9	10+
4mm DAT 90M	$12	$9	$8
4mm DAT 120M	$14	$12	$9
4mm DAT 125M	$27	$23	$20
8mm DAT 112M	$11	$10	$8
8mm DAT 160M	$16	$14	$12
TR4	$29	$27	$25
TR5	$47	$45	$43
DLT TAPE	2-4	5-9	10+
DLTIII 10-20GB	$36	$34	$30
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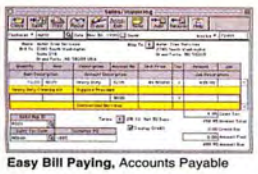
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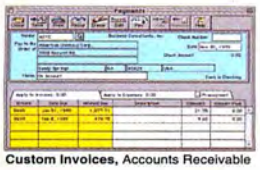
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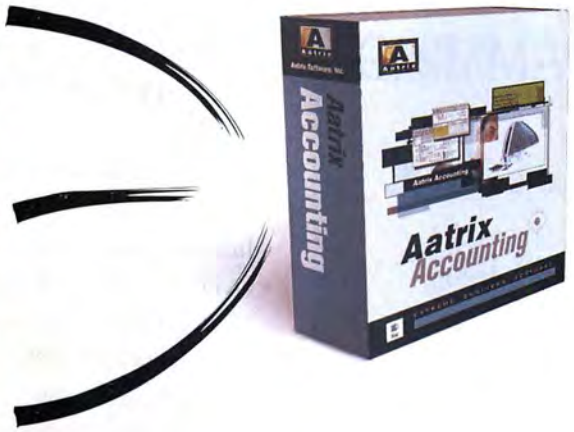
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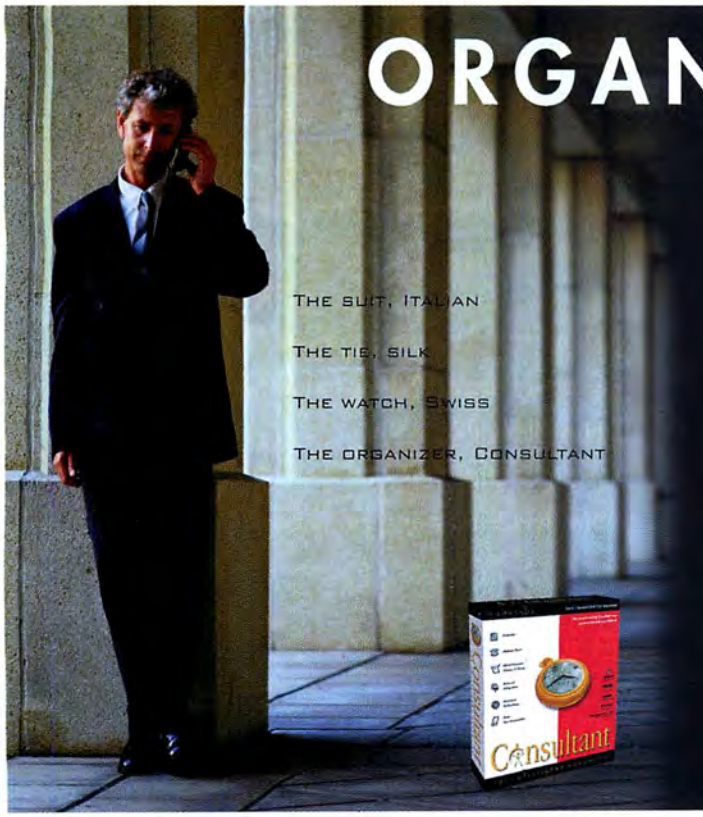
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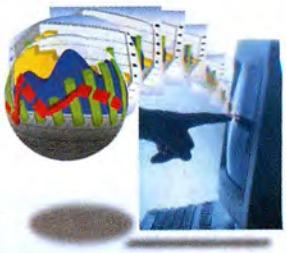
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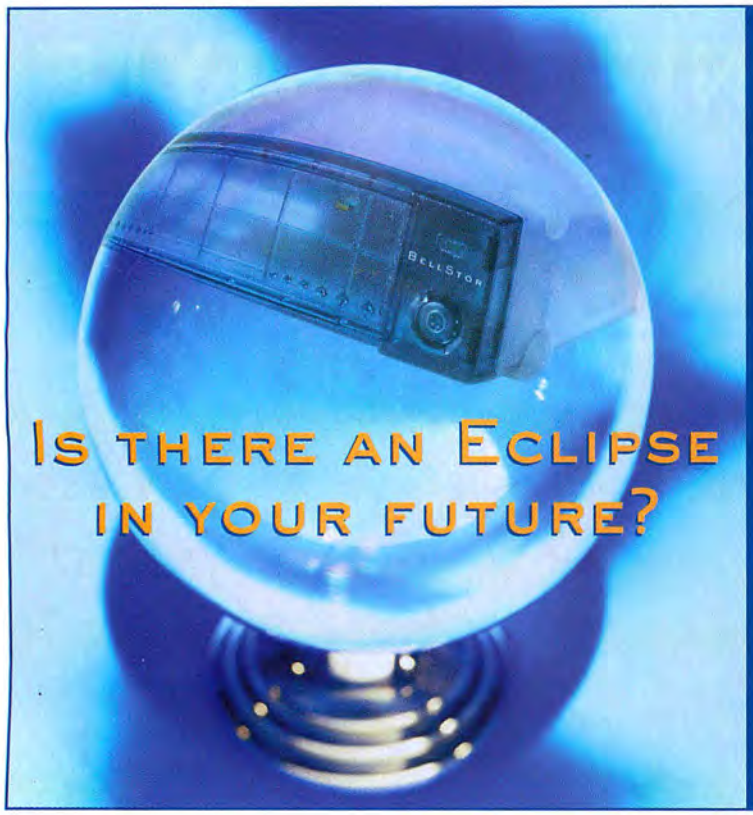
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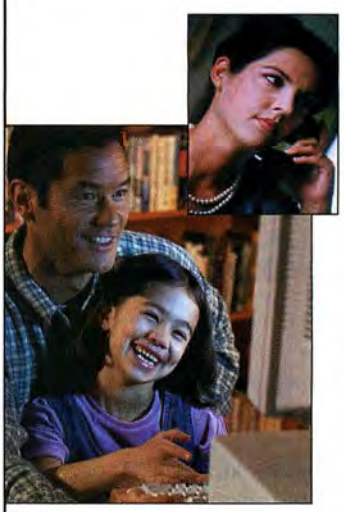
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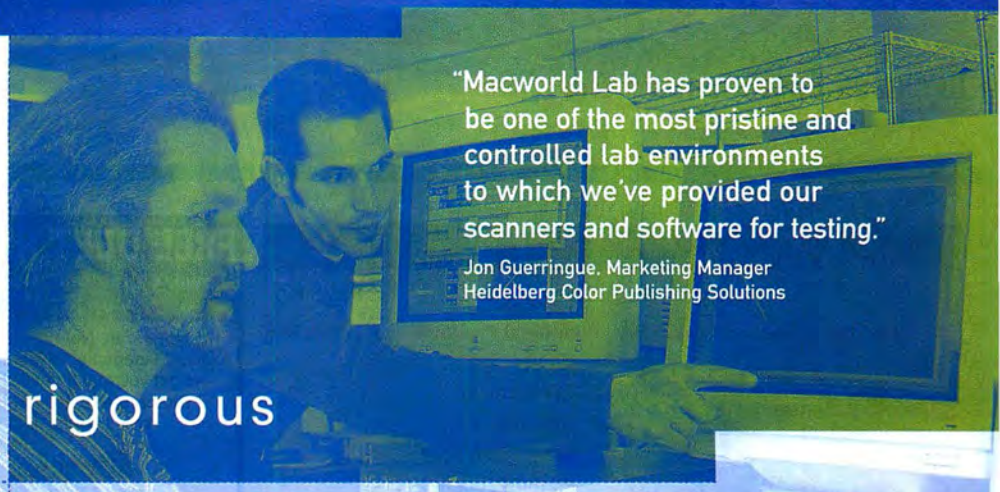
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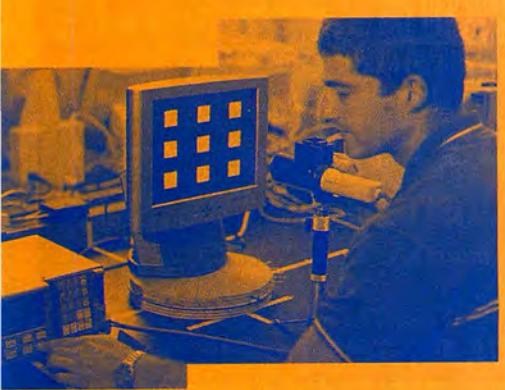
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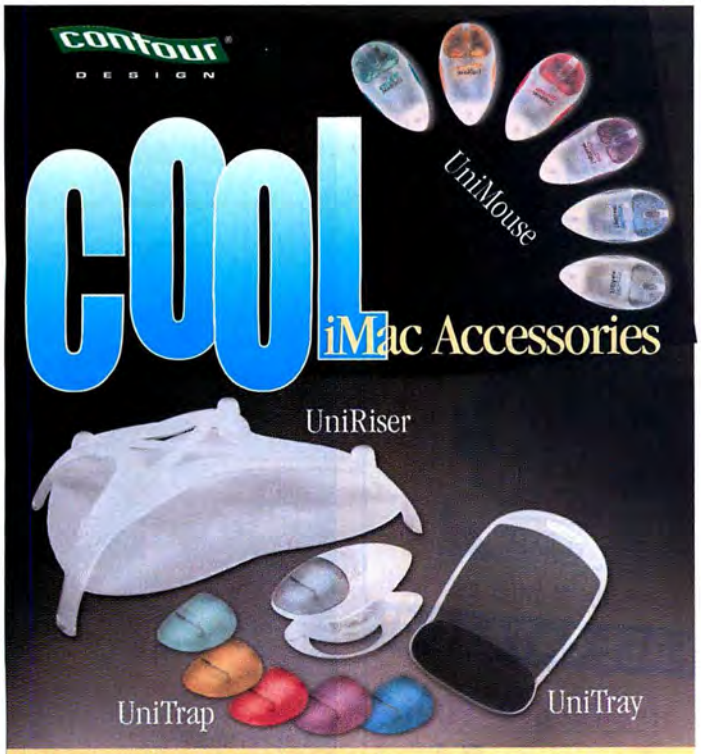
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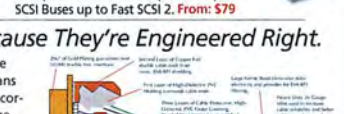
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IN THE ERA OF THE LEAKPROOF APPLE, IT'S ENTERTAINMENT 10, ACCURACY 2

LIFE SURE WOULD BE easier if we could see into the Mac future. We'd get rich anticipating Apple stock prices, we'd sell our old equipment at peak resale value, and we'd never buy a Mac that was about to be discontinued. Too bad there isn't some Web site that reveals what's behind Steve Jobs's lead-lined cloak of corporate secrecy.

Welcome to the world of Mac rumor sites. Every week, "sources" provide these sites with "leaks" concerning Apple's secret plans. The entertainment value is high, especially now that, in the Jobs era, you can't pry info out of Apple with a crowbar. But how accurate are these sites?

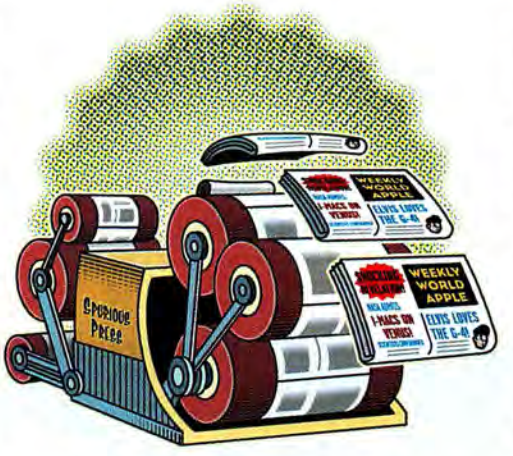
Over the last year, I've been tracking these Web pages, with the express intent of checking their hits-to-misses ratio. Apart from discovering that these Webmasters haven't a clue about when to use an apostrophe, I've learned four things:

Any source is good enough. One provocative rumor concerns an Apple-branded palmtop. It began last April, when a Web site called MacintoshMagic.com (now out of the rumor biz) published a report by a "disgruntled Apple employee" about Apple's plans. (Why would an Apple employee violate his nondisclosure agreement? Because "he's tired of keeping the best-kept secrets in the world." Sure, that's plausible.)

Anyway, this fellow described a "Palm OS/Newton hybrid" that was to be manufactured by Palm Computing.

The news turned out to be a not-very-clever April Fool's hoax. But Mac rumor sites are in the business of selling ads. And ads sell only if the sites have visitors. And visitors come only if the rumors are juicy—and never-ending. As a result, that completely illogical Apple-Palm rumor got repeated all over the Web, where it still circulates today.

Logic still applies. Apple said it was working on a consumer laptop but wouldn't release a single further detail. Still, O'Grady's PowerPage (www.ogrady.com) reported that the iBook would be available in two lines: a consumer model (in blueberry or grape) and an executive model (in mocha or cranberry). The suggestion that Apple would release a translucent *brown* laptop should have set off bogosity alarms immediately; but if you had read on, you'd have learned that this laptop was to cost $999, weigh 2.9 pounds with *two* batteries, and run for nine hours on a charge. And talk about compact: the iBook was supposed to be "almost 1 inch narrower . . . than the PowerBook 2400." Anyone who's ever seen a PowerBook 2400 knows that it's already the size of a walnut; if you planned to include keys at all on a narrower laptop, you'd have to leave out the consonants.



Rumors rise to the top. One of the silliest rumors of the summer was that, because of technical glitches, Apple had decided to cancel the iBook only 30 days before its release. The news made it all the way to MacWeek.com, which wrote that Apple was discussing "whether the product should be delayed or scrapped altogether."

Survey says: *Bzzzzt!* Less than 30 days later, Apple showed 100 fully working iBooks at Macworld Expo, to great acclaim. Now, would Apple scrap a finished computer line that had been two years in the making? You'd think that *Macworld*'s own sister publication would be smart enough to smell a rat. But MacWeek.com didn't come up with this story. It was passed along wholesale from MSNBC, who got it from ZDNN, who got it from—O'Grady's PowerPage. In the world of the Internet, consider the source . . . of the source of the source of the source.

Imminence is bliss. I don't mean to imply that every Mac rumor is bogus. The rumor sites have scored some impressive hits, especially as real announcements have drawn near. The Mac Observer (www.macobserver.com), for example, accurately predicted the release of the iBook, new iMac, and G4 models—but only a few weeks before each was actually announced. Mac OS Rumors (www.macosrumors.com) predicted the Dragon dictation-software news, but only a week before the public Apple announcement. And AppleInsider (www.appleinsider.com) got the Sears distribution deal right (two weeks in advance). MacInTouch (www.macintouch.com) only rarely plays the advance-notice game, but when it does, it's accurate.

By all means, track the rumor sites; as pure entertainment, they're unmatched. But don't get your knickers in knots over some Apple decision or product spec if your source for such information is a Mac rumor site. The accuracy of those sites is about 20 percent—at least that's what my sources say. m

DAVID POGUE (www.davidpogue.com) wrote *PalmPilot: The Ultimate Guide*, second edition (O'Reilly & Associates).

PETER HOEY



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